# TELEPHONE ENGINEER & MANAGEMENT

the telephone industry magazine

TEAM REPORTS ON

**U.S.I.T.A.'s NATIONAL CONVENTION**

CONVENTION PHOTOS — REPORTS ON CONFERENCES

*October 15, 1961, 50 cents*

# *IT CAN BE DONE!*

## Berry Marketing Techniques Can Increase Your Directory Revenues

The Yellow Pages usage survey depicted here is a familiar sight in communities where L. M. Berry and Company handles the telephone directory. It is typical of the modern marketing techniques Berry employs to equip its sales personnel and your subscribers with the means of developing intelligent, effective directory programs. Other types of consumer surveys and local market analyses also contribute to this end.

Providing valuable market information is still another phase of L. M. Berry and Company's complete directory service rendered to its Telephone Company customers and their subscribers.

It **CAN** be done for you and your subscribers. Call or write Berry today!

*for more information, call or write....*

# L. M. BERRY AND COMPANY

*Telephone Directory Advertising Exclusively*

YELLOW PAGES by BERRY

HULMAN BUILDING · DAYTON 2, OHIO · PHONE 224-7421

# TELEPHONE ENGINEER and MANAGEMENT


PUBLISHER
Roy F. Smith

EDITOR
John G. Reynolds

MANAGING EDITOR
Robert Dorsett

PRODUCTION MANAGER
Dick Reynolds

TECHNICAL EDITOR
John S. Reed

EDITORIAL ASSISTANT
Pat Cullinan

WASHINGTON EDITORS
Roland Davies & Fred Henck

CONTRIBUTING EDITORS
Bill Corman, C. D. Ehinger, L. A. Gritten, D. A. Perigo, Allan R. Stacey

ADVERTISING STAFF

ADVERTISING MANAGER
Donald C. Sorensen

ASSISTANT ADVTG. MANAGER
Ray Geraci

ADVERTISING ASSISTANT
Betsy Meyers

ADVTG. REPRESENTATIVES
Keith H. Evans & Associates
133 S. Alvarado St.
Los Angeles 57, Calif.
Phone: DUnkirk 8-2981
and
681 Market St., Rm. 1095,
San Francisco 5, Calif.
Phone: YUkon 2-4280

BUSINESS STAFF

PRESIDENT
Roy F. Smith

EXECUTIVE VICE PRESIDENT
Donald C. Sorensen

VICE PRESIDENT
John G. Reynolds

CORPORATE SECRETARY
Betty Schroeder

CIRCULATION MANAGER
Alice Purdue

Member Of
BUSINESS PUBLICATIONS AUDIT OF CIRCULATION, INC.

Average Total Qualified Circulation for 12-month period ending June, 1961 14,024

**The Telephone Industry Magazine**

*Published on the 1st and 15th of each month by*

*Telephone Engineer Publishing Corp., 7720 Sheridan Rd., Chicago 26, Ill. Telephone: Chicago, RO 4-3040.*


CONTENTS October 15, 1961 • Volume 65 Number 20


LETTERS TO THE EDITOR ..... 6
COMING CONVENTIONS ..... 8
TELEPHONE INDUSTRY NEWSLETTER ..... 9
MOSTLY ABOUT PEOPLE YOU KNOW ..... 18
WASHINGTON OBSERVATIONS, *by Roland Davies & Fred Henck* .. 22
INDUSTRY OBSERVATIONS, *by L. A. Gritten* ..... 28
50 YEARS AGO IN TE&M ..... 36
GRASSROOTS OPINION ..... 40
SEND YOUR PROBLEMS TO TE&M ..... 42
U.S.I.T.A. CONVENTION REPORT, *by John G. Reynolds* ..... 47
THE CHANGING FACADE OF COMMUNICATIONS, *by C. C. Pearce* 51
YOUR INVESTMENT IN REGULATION, *by Peter E. Mitchell* ..... 54
PRICING FOR PROFIT, *by R. D. Kingston* ..... 56
THE TRAFFIC DEPARTMENT'S PART IN PUBLIC RELATIONS, *by Betty Wyman* ..... 58
C D O PLANT MAINTENANCE, *by James M. Kirby* ..... 60
BURIED CABLE CONSTRUCTION, *by G. L. Chilberg* ..... 66
THE TELEPHONE MARKET PLACE ..... 122
ADVERTSERS' INDEX ..... 131
THE BACK OF THE BOOK, *by John G. Reynolds* ..... 132


FRONT COVER: Conveniently located at each of Miami's 351 traffic light intersections, street phones provide citizens with an efficient means of reporting emergencies. Although primarily intended for fire alarms, these phones are also used to report accidents, call police, request an ambulance or for any other purpose that deals with saving lives or protecting persons or property. Street phones helped to reduce false alarms in fire reporting from 107 to four during a comparison test with the old type box system. Phones are also used by city and county employes in reaching their offices.


TELEPHONE ENGINEER & MANAGEMENT is published on the 1st and 15th of each month by TELEPHONE ENGINEER PUBLISHING CORP., 7720 Sheridan Rd., Chicago 26, Ill. Office of Publication, 600 S. 7th St., Rochelle, Ill. Second Class Postage paid at Rochelle, Ill.

Subscriptions: U.S.A. and possessions, $4.00 per year; Canada $5.00; in all other countries $6.50. Single copies. U.S.A. 50 cents.



Copyright 1961 by Telephone Engineer Publishing Corp., 7720 Sheridan Rd., Chicago 26, Ill.



POSTMASTER: Please send Form 3579 to TELEPHONE ENGINEER & MANAGEMENT, 7720 Sheridan Rd., Chicago 26, Ill.

**NEW from Raytheon with Seven vital aids for better battery management**

# S-

## SILICON

New Raytheon **S**-series silicon battery chargers are available from stock for 24-volt and 50-volt service in a complete range of power ratings from 1 to 400 amperes. A broad new line of **S**-series battery eliminators is also available from stock.

S-series chargers provide seven important advantages for your battery system:

**SILICON RECTIFIERS:** Small size with higher efficiency . . . long rectifier life with no rectifier aging.

**STANDARDIZED COMPONENTS:** Better price and faster delivery . . . maximum parts interchangeability.

**SIMPLIFIED CIRCUITRY:** Greater reliability at reasonable cost . . . no complicated transistor control circuits.

# S SERIES

## BATTERY CHARGERS

**SMALLER AND LIGHTER:** Twice the power in half the space . . . lighter weight, too.

**STABILITY OF OPERATION:** DC output voltage stabilized to ±1%. Complete overload and short circuit protection.

**SYSTEMIZED MODULAR DESIGN:** The S-series has been designed with the system in mind. As requirements increase, you can add larger ratings in the same space. A full line of accessories is available from stock.

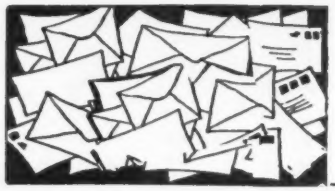
**SALES-SERVICE:** A nationwide network of Raytheon field sales/service offices is on 24-hour call. Parts and replacement units are available in the field.

For more information on Raytheon's S-series silicon battery chargers, call or write your nearest Raytheon sales office or Raytheon Company, Keeler Avenue, South Norwalk, Conn. Telephone VOlunteer 6-5571. For a complete description of S-series telephone power equipment send for new condensed catalog and selector chart 4-300.

RAYTHEON COMPANY

INDUSTRIAL OPERATIONS • C. A. & S. DIVISION

RAYTHEON



# LETTERS to the editor

### *Wants Telephone Handbooks*

*To The Editors* — Will you advise me how I can obtain a copy of your new handbook #1, entitled "Telephone Handbook for Managers and Plantmen"?

I had the opportunity to review your booklet and was very much impressed with the detailed information which was presented. I would also like information with regard to quantities up to 10 to 15, the availability and prices.

*R. K. Weinfurtner, Mgr.,*
*Outside Construction Sales,*
*Graybar Electric Co. Inc.,*
*Cleveland, Ohio.*

*Prices are*: 1-5 *copies*, $2.00 *each;* 6-25 *copies*, $1.75 *each; over* 25 *copies*, $1.50 *each. Send your order to TE&M.*

### *Thanks, Mayme*

*To The Editor*: — On behalf of the officers and directors of The Independent Telephone Pioneer Association, we wish to express our sincere appreciation to *Telephone Engineer & Management*, and to you personally for the attractive publicity on behalf of this association, appearing on page 107 of the September 15 issue of your trade journal.

I also wish to express my personal appreciation to you for all of the excellent and helpful publicity you have given our association during the past years.

*Mayme Workman,*
*Former Executive Secretary,*
*ITPA,*
*Springfield, Ill.*

### *Good Suggestion*

*To The Editor* — The 1961 edition of *Telephone Engineer's Catalog Directory* has been most helpful and informative to me as an individual. The new products, designs, and materials pictured and described in this issue help stimulate my interest in telephone communication.

The sections that I appreciated most were Sections 4 and 5. It would not hurt any to expand Section 5 and include some articles on central office and toll circuit traffic engineering, and have graphs and charts similar to those included in regular issues depicting national station gain, toll value increase, stimulation factors of automatic dialing, result of long distance rate reductions, and national average line and board fills.

In some future issues of *Telephone Engineer*, I would like to see included in the traffic portion information on traffic balance indexes, articles on intercept provision and standards, and data on toll circuit estimating.

I read every issue of *Telephone Engineer & Management* from cover to cover and find them most enjoyable. The "Telephone Industry Newsletter" was a very welcome addition. Mr. Ehinger's column is fascinating, and the readers, I feel, would welcome more articles along this line.

The Bell System is providing some of their plant extension engineering via the 1401 Computer, and intends to develop traffic and equipment engineering into a machine function. Articles on this and newer innovations would be most enlightening.

*R. H. Laufenburger*
*Traffic Engineer,*
*Gen. Tel. of Pa.,*
*Erie, Pa.*

### *Watch Future Issues*

*To The Editor*: — It is my sincere opinion that your *Catalog Directory* of 1961 is a wonderful piece of information for the industry. Your issues have always been very helpful. I wish your staff could write sometime about central office installation equipment with which I am engaged. I have been a subscriber of *TE&M* for the past five years. I have always found your publication very interesting.

*Henry C. Perez,*
*Tampa, Fla.*

### *Thank You, Sergeant*

*To The Editor*: — I have read your *Catalog Directory* with very keen interest and am much impressed with it. The section on the guide to products and services is very interesting and helpful for locating different products and their manufacturer. Section Four on technical literature is a great asset to your catalog and beneficial in obtaining valuable reference data needed in the field. I was impressed by the informative illustrations contained throughout the catalog on new products, equipment, etc.

*Robert E. Menig,*
*MSgt., Signal Corps,*
*Outside Plant Supervisor,*
*Juneau, Alaska*

### *TE&M Appreciates YOUR Attitude*

*To The Editor*: — I am a long distance operator for General Telephone Co. at Monmouth, Ill. We plan to open our new telephone dial office in November of this year. However, I thought your article, "How's Your Attitude Today?" in the Sept. 15th *TE&M* would be of much help to telephone employes, even in other positions where the public is concerned.

My husband has had *TE&M* magazine for several years, as he was a telephone lineman, but now is radio and TV repairman for the Gamble Warehouse here in Monmouth. We enjoy reading *TE&M* so much.

Do you think it would be possible for me to get several copies of this article? I would be glad to pay for them. Perhaps, if I could get them, I could interest my CO in getting copies for each operator for her notebook. Anyway, I would appreciate hearing from you regarding this article.

*Mrs. Walter A. Pierson*
*Monmouth, Ill.*

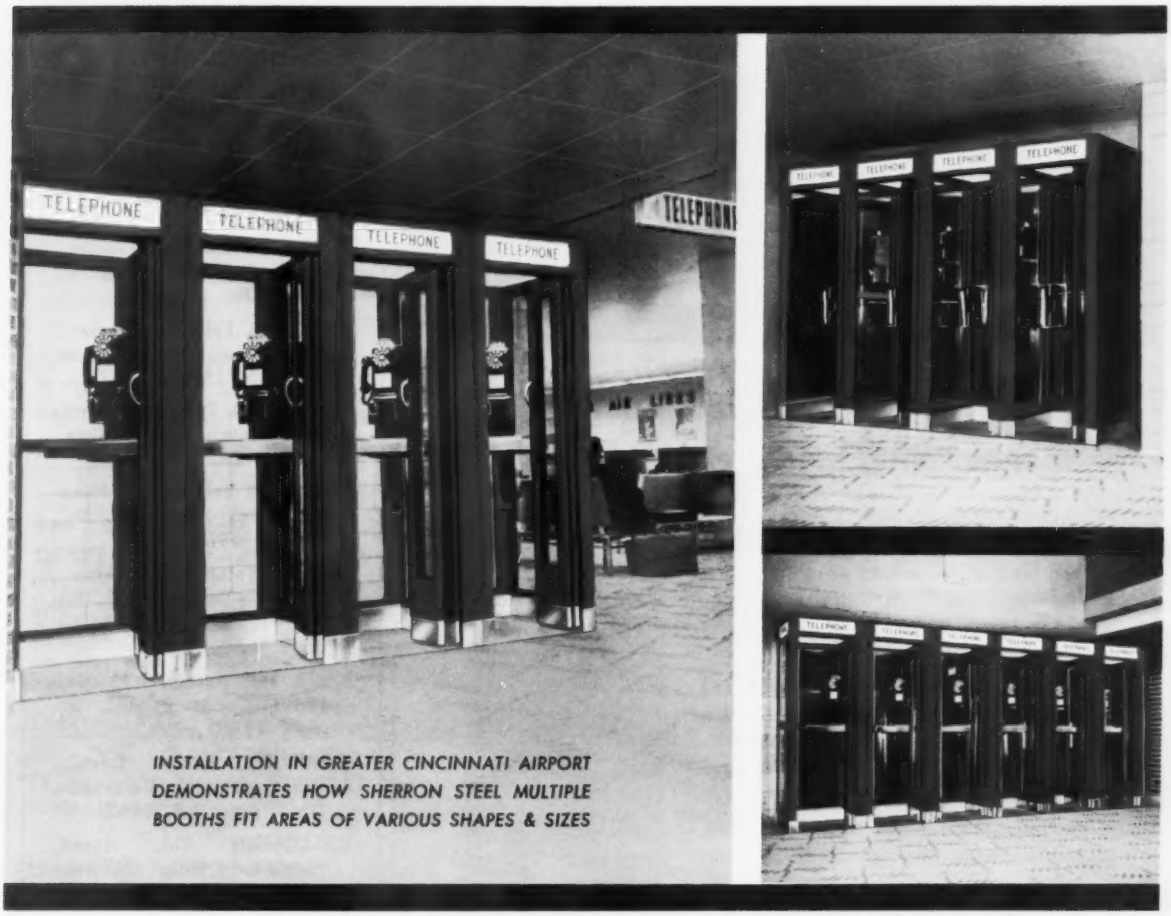
**The Editors of TELEPHONE ENGINEER and MANAGEMENT are interested in obtaining articles of interest to members of the telephone industry. Articles in manuscript form may be submitted for immediate decision, or projected articles can be outlined in a letter, in which case the writer will be advised promptly as to the suitability of the topic. TE&M can also use short "filler" items outlining worthwhile ideas that have made your telephone job easier. TE&M pays good rates for all accepted articles. Send manuscripts, or your letters of suggestion to the Editor, TELEPHONE ENGINEER & MANAGEMENT, 7720 Sheridan Rd., Chicago 26, Illinois.**

# USITA

## guides Independent telephony in public service objectives

When it comes to public service, Independent telephone companies tend to look beyond immediate demand to future necessity. More often than not, their investment in communications equipment and facilities anticipates public need. No little credit for this foresight goes to the USITA, which operates on the principle that he who serves the public well serves himself best.

This is not to be construed as a product endorsement by United States Independent Telephone Association.




*INSTALLATION IN GREATER CINCINNATI AIRPORT DEMONSTRATES HOW SHERRON STEEL MULTIPLE BOOTHS FIT AREAS OF VARIOUS SHAPES & SIZES*

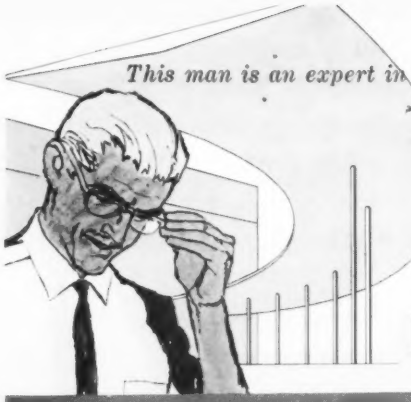
These views of the public telephone accommodations provided by the Consolidated Telephone Company at the Greater Cincinnati Airport illustrate how readily Sherron multiple booths fit into all manner of locations. There are three banks of Sherron booths at this airport, totalling 14 booths. According to Mr. L. T. Utz, Consolidated vice president, each booth averages a monthly income of $241.55.

## as evidenced by CONSOLIDATED TELEPHONE COMPANY (FLORENCE, KENTUCKY)

SEE OUR CATALOG IN SWEET'S — INDEPENDENT — Sherron ACOUSTIC SEE-THRU STEEL-STAINLESS STEEL OUTDOOR AND INDOOR TELEPHONE BOOTHS

*There's a Sherron booth for every location and budget in "gold," stainless steel or cold rolled steel.*

**SHERRON METALLIC CORP., 1201 FLUSHING AVE., BROOKLYN 37, N. Y.**



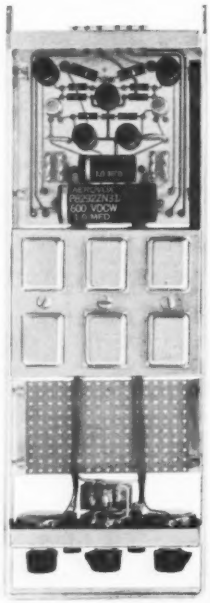
*This man is an expert in modern architecture*

...and in Low and Medium Density Communications BUDELMAN is the

# specialist

## Result: a NEW* Budelman VFR at a cost 80% below competition!

As an outgrowth of extensive lab and field testing, Budelman provides a new and improved VFR* Type 251A, at less than $100 per unit. It is the *lowest-cost*, high-gain repeater . . . incorporates newly designed transistorized circuitry* for uniform speech gain over *any* telephone line facility. Stability is excellent even without auxiliary equipment. (When ordered with equalization networks for unloaded cables, *loading coils are not needed!*) Unit features design economy, campactness —(4 take only 1¾" of rack space), low power drain and built-in signaling by-pass. Installs WITHOUT test equipment . . . supplies usable gain of line attenuation less 3 db — 15 db maximum. *Call or write today for complete information!*



*Pat. Pending

**BUDELMAN**

**ELECTRONICS CORPORATION**

BUDELMAN bec

375 FAIRFIELD AVENUE STAMFORD, CONNECTICUT


## coming CONVENTIONS

**SOUTH CAROLINA** Tel. Assoc., Clemson House, Clemson, S. C., Oct. 23-24.

**VIRGINIA** Tel. Assoc., Roanoke Hotel, Roanoke, Va., Oct. 26-27.

**OKLAHOMA** Tel. Assoc. Skirvin Hotel, Oklahoma City, Okla., Nov. 8-9.

**ALABAMA-MISSISSIPPI** Tel. Assoc., Thomas Jefferson Hotel, Birmingham, Ala., Nov. 12-14.

**FLORIDA** Tel. Assoc., The Carillon Hotel, Miami Beach, Fla., Nov. 26-28.

**NORTH CAROLINA** Tel Assoc., Carolina Hotel, Pinehurst, N. C., Dec. 4-5.

**NATIONAL** Tel Coop. Assoc., Jung Hotel, New Orleans, La., Jan. 15-17, 1962.

**MINNESOTA** Tel. Assoc.,Radisson Hotel, Minn., Minn., Feb. 25-28, 1962.

**KENTUCKY** Tel. Assoc., Phoenix Hotel, Lexington, Ky., Mar. 6, 1962.

**TEXAS** Telephone Assoc., Sheraton-Dallas Hotel, Dallas, Texas, Mar. 11-13, 1962.

**IOWA** Tel. Assoc., Roosevelt Hotel, Cedar Rapids, Ia., Mar. 19-20., 1962.

**OHIO** Tel. Assoc., Deshler Hilton Hotel, Columbus, Ohio, Apr. 3-4, 1962.

**WISCONSIN** Tel. Assoc., Plankinton Hotel, Milwaukee, Wisc., May 8-9, 1962.

**INDIANA** Tel. Assoc., Claypool Hotel, Indianapolis, Ind., May 9-10, 1962.

**MISSOURI-KANSAS** Tel. Assoc., Town House Hotel, Kansas City, Kan., May 21-22, 1962.

**ILLINOIS** Tel. Assoc., Abraham Lincoln Hotel, Springfield, Ill., May 24-25, 1962.

**PENNSYLVANIA** Tel. Assoc., Bedford Springs Hotel, Bedford, Pa., June 4-6, 1962.

# NEWSLETTER
TELEPHONE INDUSTRY

**Prepared By The Editorial Staff of TELEPHONE ENGINEER and MANAGEMENT**

ON THE 1st OF EACH MONTH ★ ON THE 15th OF EACH MONTH

Dear Sir: October 15, 1961

KENTUCKY COMMISSION ORDER BANNING ILLEGAL USE OF COMMUNICATIONS SERVICE CLOSELY SIMILAR TO ANTI-GAMBLING BILL PASSED BY CONGRESS . . . Order by Kentucky Public Service Commission closely similar to language of bill passed by Congress to ban use of communications facilities for illegal purposes has been issued as emergency regulation & approved by the governor. It provides that telephone companies under jurisdiction of commission will discontinue or refuse service to any customer when notified in writing by federal or state law enforcement agency, Kentucky state attorney general, or any commonwealth's attorney or county attorney acting within his jurisdiction that service is being or will be used for transmitting or receiving gambling information. Order provides no civil or criminal penalties will be assessed against telephone company for actions taken in compliance with such notices.

NEW CONTRACT IN SNET, WAGE REOPENERS IN THREE COMPANIES REPORTED . . . Wage increases from $1.50 to $4 a week are provided in new one-year labor contract agreement announced last month between Southern New England Tel. Co. & Connecticut Union of Telephone Workers, which represents some 9,000 employes in all departments of company.

New contract provides for increase in minimum pensions for some employes, increase in the company-paid portion of cost of group life insurance, & an agreement that company will "notify the union in advance & discuss steps to be taken to minimize the effect on employes of the introduction of further automated operations," joint announcement stated. Company estimated over-all cost of agreement at $1,200,000 on annual basis.

Illinois Bell Tel. Co. & Chicago Telephone Traffic Union, representing about 3,400 employes in city area, reached agreement under wage reopener providing increases of $1.50 to $2 weekly, with increases for certain employes of $2.50 a week, and reduction in schedule for operators from 6½ to 5½ years.

Bell Tel. Co. of Pennsylvania & Pennsylvania Telephone Guild, which represents 2,900 commercial department employes, reported agreement, also under wage re-opener, providing for wage increases of $1.50 to $5 weekly. Some job reclassifications also are called for in the agreement.

In another wage reopener agreement, Mountain States Tel. & Tel. Co. and International Brotherhood of Electrical Workers, representing 800 plant employes in Montana, settled on increases of $2 to $3 weekly.

DATA FOR YOUR FACTS' FILE . . . The Eastern U. S. has growing supermetropolitan area of 31.5 million inhabitants—32 contiguous Standard Metropolitan Statistical Areas that stretch through 10 states from New Hampshire to Virginia. During 1950's this complex increased by 4.3 million, or nearly 16 per cent . . . U.S. companies plan to spend $4.5 billion for plant & equipment abroad in 1961 & expect to maintain this rate during 1962. 1961 total exceeds 1960 by more than 20 per cent & approaches high of 1957. . . . Some form of work was under way or completed on 63 per cent of projected 41,000-mile National System of Interstate & Defense Highways on June 30. More than

# INDEPENDENT..

The largest independent, nationwide distributor of equipment and supplies for the independent telephone companies...that's **GraybaR**

## THERE'S A GRAYBAR SERVI

**ALABAMA**
- Birmingham
- Huntsville
- Mobile

**ARIZONA**
- Phoenix
- Tucson

**ARKANSAS**
- Little Rock

**CALIFORNIA**
- Anaheim
- Bakersfield
- Fresno
- Long Beach
- Los Angeles
- Oakland
- Oceanside
- Sacramento
- San Bernardino
- San Diego
- San Francisco
- San Jose
- Santa Barbara
- Van Nuys

**COLORADO**
- Colorado Springs
- Denver

**CONNECTICUT**
- Hamden
- West Hartford

**DELAWARE**
- Wilmington

**DISTRICT OF COLUMBIA**
- Washington

**FLORIDA**
- Fort Lauderdale
- Jacksonville
- Miami
- Orlando
- St. Petersburg
- Tampa
- West Palm Beach

**GEORGIA**
- Atlanta
- Columbus
- Savannah

**IDAHO**
- Boise

**ILLINOIS**
- Chicago
- Peoria
- Springfield

**INDIANA**
- Evansville
- Hammond
- Indianapolis

**IOWA**
- Davenport
- Des Moines

**KANSAS**
- Wichita

**KENTUCKY**
- Lexington
- Louisville

**LOUISIANA**
- Baton Rouge
- Lake Charles
- New Orleans
- Shreveport

**MAINE**
- Portland

**MARYLAND**
- Baltimore

**MASSACHUSETTS**
- Boston
- Springfield
- Worcester

**MICHIGAN**
- Detroit
- Flint
- Grand Rapids
- Lansing

**MINNESOTA**
- Duluth
- Minneapolis
- St. Paul

**MISSISSIPPI**
- Jackson

**MISSOURI**
- Kansas City
- St. Louis
- Springfield

# INDEPENDENT...AND NATIO

## The largest independent, nationwide distributor of equipment and supplies for the independent telephone companies...that's GraybaR

## RVICE CENTER NEARBY!

**MONTANA**
- Butte

**NEBRASKA**
- Omaha

**NEW HAMPSHIRE**
- Manchester

**NEW JERSEY**
- Newark
- North Brunswick

**NEW YORK**
- Albany
- Binghamton
- Buffalo
- Larchmont
- New York City
- Roosevelt Field
- Rochester
- Syracuse

**NORTH CAROLINA**
- Asheville
- Charlotte
- Raleigh
- Rocky Mount
- Winston-Salem

**OHIO**
- Akron
- Cincinnati
- Cleveland
- Columbus

**RHODE ISLAND**
- Providence

**SOUTH CAROLINA**
- Columbia
- Greenville

**SOUTH DAKOTA**
- Sioux Falls

**TENNESSEE**
- Bristol
- Chattanooga
- Knoxville
- Memphis
- Nashville

**TEXAS**
- Abilene
- Amarillo
- Arlington
- Austin
- Beaumont
- Corpus Christi
- Dallas
- El Paso
- Fort Worth
- Houston
- Odessa
- San Antonio

**UTAH**
- Salt Lake City

# IONWIDE

643

- Dayton
- Toledo
- Youngstown

**OKLAHOMA**
- Oklahoma City
- Tulsa

**OREGON**
- Eugene
- Portland

**PENNSYLVANIA**
- Allentown
- Erie
- Greensburg
- Harrisburg
- Philadelphia
- Pittsburgh
- Reading

**VERMONT**
- Rutland

**VIRGINIA**
- Norfolk
- Richmond
- Roanoke

**WASHINGTON**
- Seattle
- Spokane
- Tacoma

**WEST VIRGINIA**
- Charleston

**WISCONSIN**
- Green Bay
- Madison
- Milwaukee

(Concluded from page 9)

10,800 miles, including toll roads, were open to traffic, 4,847 miles were under construction, & engineering or right-of-way acquisition were in progress on another 10,052 miles. . . . With increased U.S. output expected in last half of year, world steel production in 1961 should exceed record 360 million tons of 1960. Exclusive of U.S., world output in first six months was 7 per cent ahead of same period of 1960. American production in first half of 1961 was down 26 per cent. . . . Exact center of U.S. population is on a Clinton County, Ill., farm, about 6.5 miles northwest of Centralia. "Center of area" for 50 states is in Butte Co., S. D.

THREE INDEPENDENT COMPANIES, CWA REPORT LABOR CONTRACT AGREEMENTS . . . Kansas State Tel. Co., Baxter Springs, Kan., & Communications Workers of America reported agreement last month on new 15-month contract providing wage increases of five cents across-the-board for traffic, & 12 to 15 cents for plant employes. Other improvements include four weeks vacation after 25 years service & three weeks after 10 years.

One-year agreement between Gilroy (Calif.) Tel. Co. and CWA calls for wage increases of five to nine cents, retroactive to June 25, shortening of schedules for operators & plant clerical employes from six to 5½ years, increase in service assistant differential from $9 to $10 weekly, & company payment of monthly premium for health insurance.

Central States Tel. Co., Junction City, Wis., & CWA reported 19-month agreement, effective retroactively to August 1, providing across-the-board increases for traffic & plant employes of five cents, effective August 1, and 10 cents an hour, effective March 1, 1962.

NEWS HIGHLIGHTS . . . Acquisition of controlling interest in Western Caroline Tel. Co., Weaverville, N.C., announced by William B. Harrison, pres., Independent Tel. Corp., Dryden, N.Y. Western Caroline Tel. serves more than 17,000 telephone stations in North Carolina & Georgia. Independent Telephone Corporation's system has comprised 14 subsidiary companies operating in Florida, Michigan, Missouri, New Jersey, New York & West Virginia. . . . United Utilities, Inc., Kansas City, Mo., reporting record earnings this year & expecting continuation of favorable trend, has increased quarterly dividend for fourth time since 1959, according to R. Crosby Kemper, board chairman. Directors have voted quarter dividend of 22 cents a share, payable Sept. 30 to stockholders of record Sept. 8. Company paid initial dividend of 20 cents a share in previous quarter, following 2-for-1 stock split, first change in common capitalization. Annual rate on present dividend is 88 cents, increase of 25 per cent more than 1960 rate, adjusted for stock split. Gross revenues for year ending July 31, 1961, were 9 per cent greater than for previous 12 months, & net income rose 17½ per cent. . . . Increase in common stock dividend of Rochester (N.Y.) Tel. Corp., to 27½ cents a share from 25 cents was declared by company's board of directors last month, & was payable Oct. 2 to shareowners of record Sept. 15. Rochester Telephone President William A. Kern said "The principal reason for the increase is to more adequately compensate our stockholders for the capital funds they have invested, and to keep this company's return to the investor more comparable with that of other telephone companies. Our stockholders have not received an increased dividend since 1955." . . . Ray Blain, chief engineer of U.S. Army Signal Engineering Agency, retired Aug. 31 after 43 years of service with Signal Corps. Had been stationed in Washington for 22 years, after service with agency at other points. He is vice president of Independent Telephone Pioneer Association, and technical editor of "Telephony."

*In 1858, the first Atlantic Cables were insulated with Bishop Gutta Percha.*

# Today, Bishop answers industry's critical demands . . . from the tropics to polar regions.

## This is the world of BISHOP ELECTRICAL INSULATION

114 years of continuous development and service has established Bishop as a leading producer in the electrical insulation field. Bishop's high standard is maintained in a comprehensive line of plastic and synthetic rubber tapes, epoxy compounds for cable splicing and special compounds for cable repair.

### Bi-Seal Self Bonding Electrical Tape

Exclusive Bishop polyethlene base tape is unexcelled for all-weather application in communication and power distribution wire and cable splicing. Available in ½", ¾", 1", 1½", 2", widths.

**Superior corona and ozone resistance**
**Fuses into solid mass**
**Moisture, corrosion and chemical resistant**
**High dielectric strength**
**Superior aging and weathering**
**Long storage life**

**Write for catalog or specific data.**

**Other Bishop Tapes**

No. 85 All-Climate Vinyl Electrical Tape

No. 30 High Voltage (Butyl) Splicing Tape

No. 125 Electrical (Butyl) Filler Tape

NEOFIL (Neoprene) Electrical Filler Tape

BI-PRENE (Neoprene) Electrical Jacketing Tape

VINYL ELECTRICAL TAPE No. 1 (.007") and No. 2 (.010")

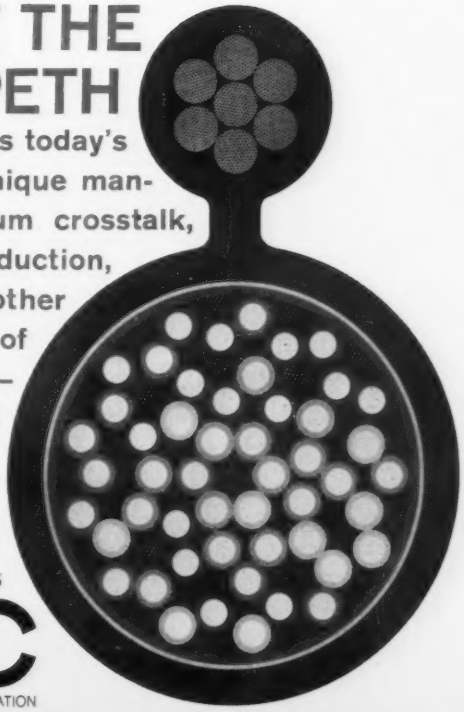
RUBBER TAPE

# BISHOP

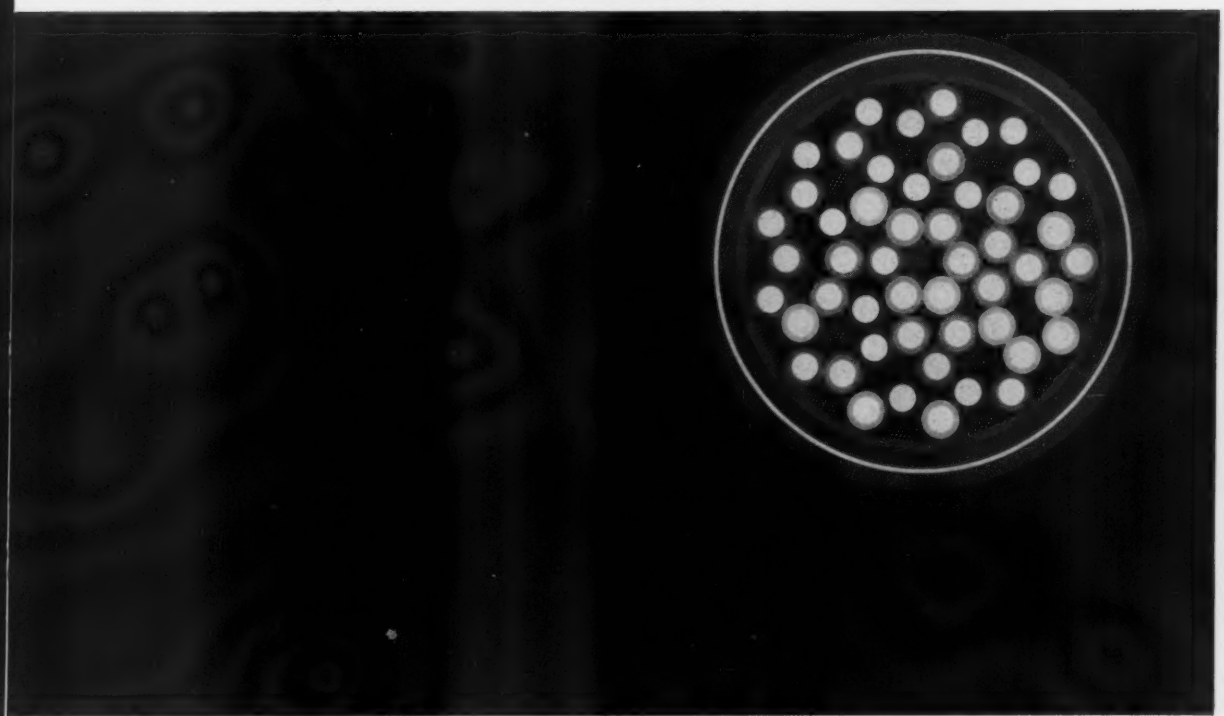
**Manufacturing Corporation**, Cedar Grove, Essex County, N. J.

# FOR OUTSIDE PLANT THE STANDARD IS QUALPETH

Get QUALPETH for all your outside plant—it's today's new standard of quality! ● QUALPETH's unique manufacturing process assures you of minimum crosstalk, echo and noise—because all Qualpeth production, regardless of its intended use for trunk or other circuits has an average mutual capacitance of ± .004 microfarads per mile. ● That's why—for outside plant, specify QUALPETH — the modern standard of quality. See your distributor, or write General Cable Corporation, 730 Third Avenue, New York 17, New York. ● Distributed by: Automatic Electric Sales Corp., Northlake, Illinois; Leich Sales Corp., 427 West Randolph St., Chicago 6, Illinois



GCC GENERAL CABLE CORPORATION



# Mostly About People You Know

## Retired Telephone Men Form GHO Consultant Division

A NEW TELECOMMUNICATION division, staffed by communications experts who have been retired at age 65, is now operating under the direction of R. W. Bucek, recently named vice president — Telecommunications, for the Gustav Hirsch Organization, Inc., Columbus, Ohio.

BUCEK

This *task force* of experienced telephone industry executives and engineers will make available to independent telephone company operators their technical skills and specialized knowledge on long-range or emergency problems.

## C & U Promotes Moncho and Meade

THOMAS MONCHO has been promoted to vice-president — operations, and Kenneth R. Meade, Jr. is now comptroller and assistant treasurer of Chenango and Unadilla Telephone Corporation.

Moncho joined the C & U Tel. Corp. as a draftsman in 1946. He

MONCHO

MEADE

was promoted to junior engineer the next year. In 1948 he became plant engineer and worked on company dial conversions.

He was promoted to district manager and transferred to Sidney in 1951. In 1960 Moncho was promoted to operations superintendent for the company and returned to the firm's Norwich offices.

Meade joined C & U Tel. Corp. as a lineman on graduation from Hartwick College with a bachelor of arts degree in 1950. He served as an apprentice before promotion to assistant commercial manager in 1950. He served in that capacity until transferred to Waterville in 1951 as district manager. He returned to Norwich as manager of purchasing and personnel in 1960.

## Southern Nevada Tel. Co. Employe Writes History

"IN THE YEAR 1907, a businessman, C. P. Squires, with the need for communications to assist him in his business transactions in a new community, installed a magneto telephone line from a wholesale feed company to the Old Ranch. This was the beginning of the Southern Nevada Telephone Company, which was part of the Las Vegas Trading Company encompassing several business ventures."

With this opening paragraph Woodrow W. Long of the Southern Nevada Telephone Company opens his 23-page booklet, "A History of Southern Nevada Telephone Co. — 1907 to 1961."

Harassed by a nationwide bank panic, the Las Vegas Trading Company re-financed and in 1909 as the Consolidated Power and Telephone Company started its operations with 20 magneto sets. By 1923 the number of subscribers exceeded 200, and by 1927 there were 322 telephones in service.

In 1929 the two utilities known as the Consolidated Power and Telephone Company were separated and the telephone company was incorporated as the Southern Nevada Telephone Company, Inc. Also in 1929 connection was made with the Bell System.

Long describes how the construction of Hoover Dam, World War II, development of atomic testing grounds, and other events, some good, some not so fruitful, affected the history of the Southern Nevada Telephone Company until 1961.

"And all ready on the planning board is customer direct distance dialing, Boulder City conversion to dial (already in progress), and mark sense toll billing, just to name a few," says Long in the concluding paragraphs.

## Wallace L. Sandquist, U.S.I. Quality Control Manager

WALLACE L. SANDQUIST of Galion, Ohio, has been appointed manager, quality control, for United States Instrument Corporation.

SANDQUIST

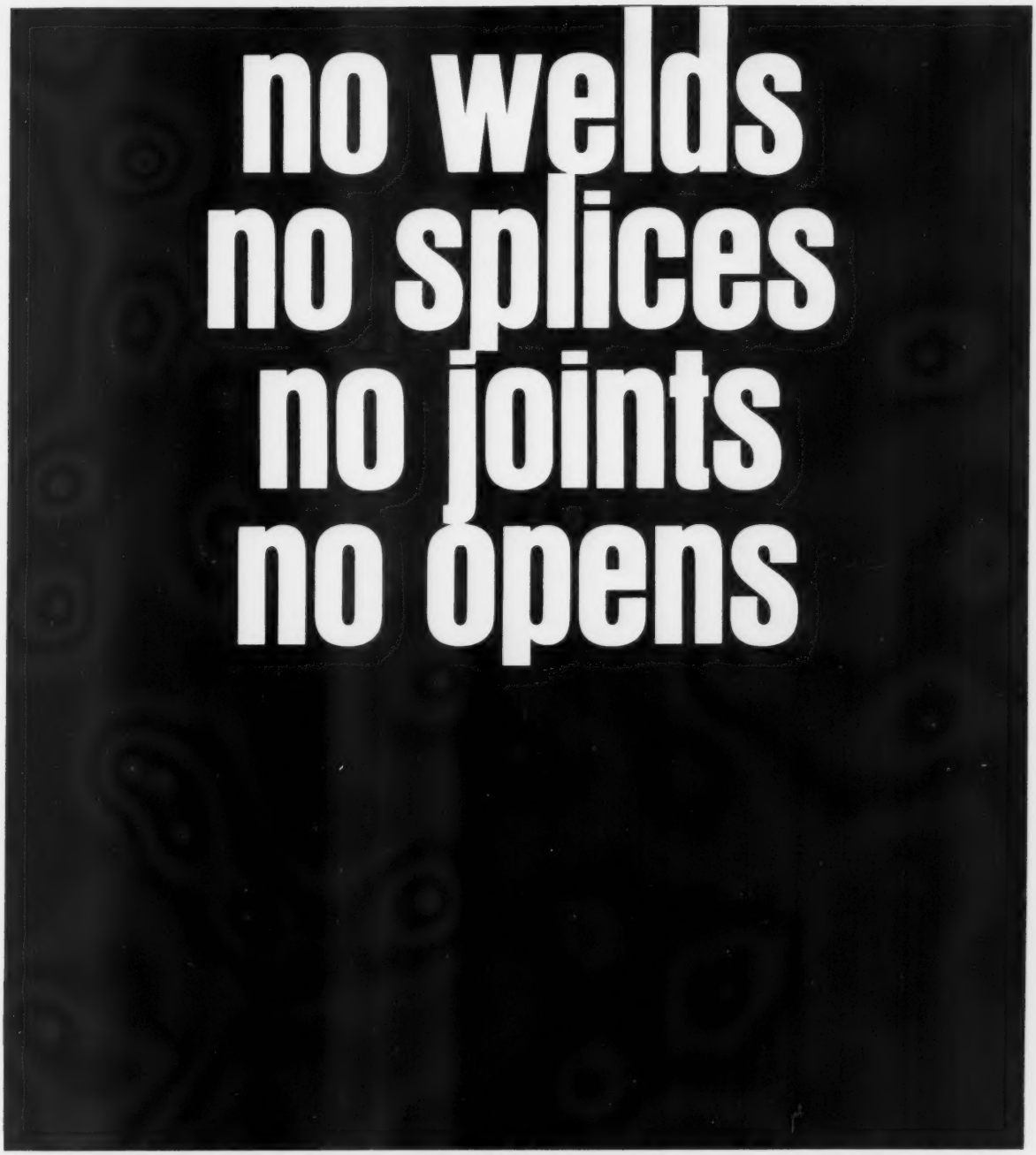
He has worked from 1939 until his recent appointment with U.S.I. for North Electric Company of Galion, specializing in quality control operations.

## C. C. Crow to Telephone Switching at Automatic

CLARENCE C. CROW, former central division manager for General Telephone Company of the Northwest, is now a project engineer in the Telephone Switching Systems Development Department of Automatic Electric Laboratories, Inc., Northlake, Ill.

CROW

Crow joined General Telephone in Spokane as an equipment engineer in July, 1958. He previously had been with North Electric Company, Galion, Ohio, for nine years as circuit design supervisor. At General Telephone Co. of the Northwest he served as plant extension and building engineer from November, 1958




**Avoid all these hidden problems with ALPHADUCT Dated Drop Wire because every service drop is packaged in a single length!**

For details, write Alphaduct Wire and Cable Company, New Brunswick, N.J., CHarter 9-8090.■ National distributors: Automatic Electric Sales Corporation, Northlake, Ill.; Leich Sales Corporation, 427 West Randolph Street, Chicago 6, Ill.■ Regional distributors: Buckeye Telephone & Supply Co., Columbus, Ohio; The Lindsay Telephone & Supply Co., Cleveland, Ohio; Pankey Supply Co., Charlottesville, Virginia.

ALPHADUCT
WIRE AND CABLE CO.
NEW BRUNSWICK, N. J.
CHarter 9-8090

# "Mostly About People"

*(Concluded from page 18)*

until promotion to division manager in March, 1960.

Crow attended Ohio State University and the University of Georgia, and holds a BS degree in electrical engineering from Case Institute of Technology.

## Lingle Joins Raytheon as Field Application Engineer

BOB LINGLE is now a field application engineer with the Communications and Data Processing Operation Division of Raytheon Co. He will work in Ohio, Indiana, Michigan, Kentucky, West Virginia, and western Pennsylvania.

LINGLE

Previously, he has been a sales engineer with Sola Electric, and has worked with Western Electric Co. as an equipment engineer in the No. 5 Crossbar Central offices in New York and New Jersey, He also has engineering experience with the I.T.T. Kellogg's Communication System Engineering Dept.

Lingle is a graduate of Southern Illinois University.

## Beierle to Electronic Switching Systems Planning at Automatic

DR. JOHN D. BEIERLE is the new supervisor of electronic switching systems planning with the Research Department of Automatic Electric Laboratories, Inc., Northlake, Ill. He will be responsible for planning research on electronic telephone exchanges.

BEIERLE

Dr. Beierle received his AB, AM, and Ph.D. degrees from the University of Pennsylvania. He has specialized in logic and memory organization of electronic central offices.

Prior to his new post, he was a member of the technical staff of Bell Telephone Laboratories, where he worked on development of the Morris, Ill., electronic central office.

Dr. Beierle also has taught at the University of Pennsylvania and was on the staff of the University of California at Los Angeles.

## Northern Ohio Tel. Co. Traffic Supt. Killed

CHARLES A. HENRY, traffic superintendent of Northern Ohio Telephone Company and chairman of the Ohio Independent Telephone Association Traffic Committee, was killed in an accident September 9. He was 32.

During practice for the Road America sports car races at Elkhart Lake, Wis., the car he drove ran up a bank and turned over. Mr. Henry died shortly afterward.

The son of Col. William C. Henry, president of Northern Ohio Telephone Company, Mr. Henry was born in Bellevue, Ohio, in 1929. Later he was graduated from Deerfield Academy, Deerfield, Mass., and did post-graduate work at the Hun School, Princeton, N.J. He also was graduated from Wittenberg College, Springfield, Ohio, in 1952.

Mr. Henry is survived by his wife, four children, a brother, sister, and his father.

## T. V. Daley Named VP Of New York Tel. Co.

THOMAS V. DALEY has been named vice president of the New York Telephone Company. He had been assistant vice president.

For the past nine years he has handled press, radio, and TV relations for the company. In his new post he will report to the president and will assist him in administration.

A 1928 graduate of St. Lawrence University, Daley has worked with this telephone company for 31 years. He began his telephone career as a commercial representative in Troy and joined the firm's Public Relations Department in 1947 as an information assistant.

## M. G. Ryon Staff Engineer, Telecom of North Electric

M. G. RYON is now staff engineer in the Telecom Division, North Electric Company, for North Carolina, South Carolina, Virginia, West Virginia, Kentucky, and Tennessee.

With North Electric since 1938, he worked in the company's development laboratory on switchboard design. Attached to the laboratory for 13 years, he was senior project engineer for four years.

RYON

Later, he held sales positions with the company, including the regional manager's post for northeastern United States. Recent assignments included positions as assistant sales manager and sales manager for the Telecom Division. William Clendenin, north field salesman, will assist Ryon.

In another appointment, Carl J. Bartoseski is the new manager of Paricode Systems in the Electronetics Division of North Electric Company, Galion, Ohio.

He will be responsible for application and marketing of commercial control systems, including the Paricode Supervisory Control System, used in oil and gas pipeline industries.

Bartoseski was graduated from the University of Detroit in 1958 with a degree in electrical engineering. He joined North Electric in 1959.

**WHAT'S YOUR STORY?**

**To keep TE&M's new department — *"Mostly About People"* — going, the editor of TE&M does need your help. So send us stories and pictures of the people in your company who have been promoted, honored, or retired. Send all items to Editor, TE&M, 7720 Sheridan Rd., Chicago 26, Illinois.**

## Commercial Cord—best for you – here's why –

**All you need with just one call.** Commercial Cord makes everything! There's cords for handsets, desksets... intercoms, transmitters...switchboards, operators. There are straight cords and Spiraflex®...nylon jackets and PVC (in colors) ...standard and extended lengths. And there's any "special" you can think of. Fill all your cord needs with just one order! **Any quantity—fast!** One cord or a thousand—Commercial Cord fills your order fast. Large, full line stocks strategically spotted coast to coast guarantee that no order's too large—or too small—to be handled speedily, completely. In most cases, your order is on its way to you immediately. Even "specials" come so fast you'll forget they're custom-made! Commercial Cord means fast service!

**Quality to spare.** There's no cord available anywhere that beats the high quality you get in every Commercial Cord! Whether it's for a handset, deskset, switchboard, intercom or any other system—you can count on top, years-long performance from Commercial Cords. They're rugged, reliable and noise-free... they're unmatched by any other cords. Get Commercial Cords for the best! Commercial Cord Co., Clifton Springs, New York. Distributed by: Leich Sales Corporation, 427 West Randolph St., Chicago 6, Illinois. Automatic Electric Sales Corporation, Northlake, Ill. Automatic Electric Sales (Canada) Ltd., 185 Bartley Drive, Toronto 16, Ont.

**COMMERCIAL CORD**

# Washington OBSERVATIONS

By ROLAND DAVIES and FRED HENCK

**NARUC Special Telephone Committee ends life after 20 years as new 11-member Communications Problems Committee is set up in structure realignment; separations problems up to FCC, with "status quo" reported.**

TELEPHONE SEPARATIONS — a major problem of state-federal telephone regulation, especially during the past two decades — is still with us, but a landmark institution has been removed.

After 20 years of activity, the Special Telephone Committee of the National Association of Railroad & Utilities Commissioners is no longer in existence. In its place a new Committee on Communications Problems has been established.

This may seem an internal organizational matter of interest primarily to NARUC members. But it's a matter of significance to those concerned with telephone regulation.

The action opens five new positions on this important committee. The special unit had six members, and all standing NARUC committees have 11 members.

This communications committee is a *working* group in a special sense. (Some NARUC committees by the nature of their assignment restrict themselves to reviewing case material and presenting a report to the annual convention.) The telephone committee and its assigned staff groups had functioned almost as a separate agency, negotiating separations changes and other major assignments.

When the change to a standing committee was proposed, fears were expressed that an 11-man group might prove less manageable. In the past this special group has had members with an active interest in the field, developing specialized knowledge, and with a fine attendance record at meetings.

Whether this will continue remains to be seen. State commissioners are busy men, with responsibilities in their home areas, other committee assignments, and often other business interests.

Because of the role played by this organization in the over-all regulatory picture, we'd like to comment here about NARUC's annual convention, held in late September at Atlantic City, N. J.

In a reading of the special telephone committee's final report, and after a series of informal meetings between Federal Communications Commission and NARUC personnel at the convention, called by STC Chairman Everett H. Krueger, Jr., of Ohio, one fact was clear. The two organizations are far from agreement on the state commissions' desire for separations revisions which would transfer additional revenue requirements to interstate operations to help minimize the state-interstate toll rate disparity problem.

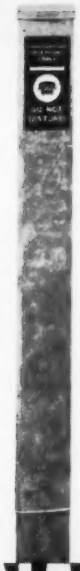
The situation on separations was described as essentially *status quo* after the meetings. The next move appeared to be up to the FCC, after further review by that agency of possible effects and ramifications of three separations plans discussed. These are: The message-minute-mile plan; the circuit mile plan; and the statewide apportionment plan, or SWAP.

FCC representatives at previous sessions have indicated that all three plans, in their present forms, have features the commission considers undesirable. There also has been a lack of Bell System enthusiasm for any of the three proposals.

NARUC sources said, using a 6½ per cent rate of return factor, it has been estimated the M-M-M plan would transfer $74 million in annual revenue requirements from intrastate to interstate. Similar transfers estimated under the other two plans, using the same rate of return basis, would be $62 million for circuit mile and $52 million for SWAP.

Surveying estimated effects state by state, it was understood no state would be adversely affected — have an increase in intrastate revenue requirements — by the M-M-M plan. Two states would have slight boosts in state revenue requirements, if the circuit mile plan should be adopted. And six states would wind up in the red, if the present form of SWAP should go into effect.

A resolution urged the FCC and the telephone industry to concur in the NARUC recommendation that digit absorbing equipment not required for rendition of local service be directly assigned to toll, or that only toll usage factors be applied to the equipment. This was the first



EASY
TO
INSTALL
EASY
TO
SERVICE

# INDIANA TERMINAL HOUSINGS

## FOR BURIED WIRE AND CABLE

Terminate, splice or load your buried wire and cable with absolute tops in protection —specify dependable, labor saving INDIANA TERMINAL HOUSINGS. They're extra-rugged steel, heavily hot-dip galvanized after forming to combat corrosion. Available in pedestal or pole mounted types, and in sizes to handle from 1 to 400 pairs. The expertly engineered design of INDIANA TERMINAL HOUSINGS insures easy installation... fast connections... ready accessibility for servicing... negligible maintenance. For details, write for Catalog TH-101R. Indiana Steel & Wire Co., Muncie, Indiana.

## INDIANA STEEL & WIRE COMPANY, INC.

# TELEPHONE LOADING COIL ASSEMBLIES AND ACCESSORIES

### TYPE C124 LEAD CASES

Equipped with Types 632 (88MH), 638 (44MH), 642 (88MH) or 641 (44MH) coils. Contain 4 to 76 coils—lead or plastic stubs.

★ Steel case assemblies available for manhole mounting and direct earth burial.

### TYPE C125 STEEL CASES

Equipped with Types 632 (22MH), 638 (44MH), 642 (88MH) or 641 (44MH) coils.

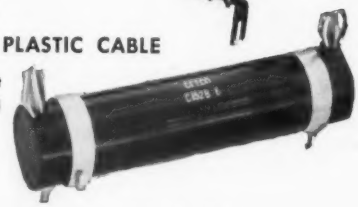
## SPLICE MOUNTING ASSEMBLIES

### TYPE 167 CASE FOR LEAD CABLE
### TYPE 162 CASE FOR PLASTIC CABLE

Using one to sixteen Type 632 (88MH), 638 (44MH), 642 (88MH) or 641 (44MH) coils.

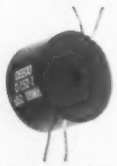
### TYPE C152 CASE FOR PLASTIC CABLE

Sizes — One to twenty-eight coils. Using Types C652 (88 MH) or 651 (44MH) coils.



## READY MOUNT LOADING COIL CASES FOR SPLICING CASES AND BURIED CABLE TERMINALS

C152-3 (3 COILS)



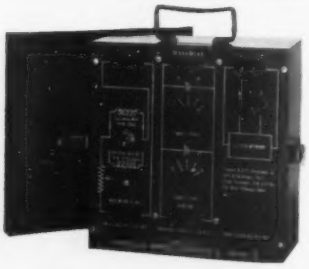
C152-1 (1 COIL) "BOLT MOUNTING"

### TYPE C152 CASES

Are equipped with one to 26 type 652 (88 MH) or 651 (44MH) or 656 (66MH) coils. For mounting in splice-maker cases and terminals.

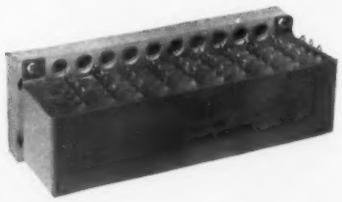
### C600A1 CASE

### C-100 TEST SET



C-100 Test Set for making acceptance tests and locating loading irregularities.

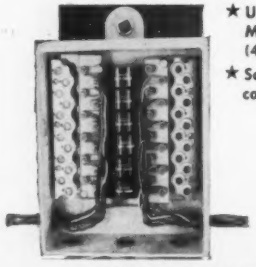
Economical
Easy To Use
Reliable
Guaranteed Results



C600A1 Case equipped with 10-C1574A Inductor capacitors or loading coils for mounting on horizontal side of MDF.

### TYPE 177 TERMINALS

FOR 6, 11, 12, 16 AND 18 PAIR RURAL DISTRIBUTION WIRE



★ Using Type 637A (88 MH) or Type 637B (44MH) coils.

★ Sold with or without coils.

TYPE 637A COIL

### NONPROTECTED READY MOUNT ASSEMBLIES

(FOR ALL STANDARD PARKWAY TERMINALS)

16 PAIR No. CP16-137

12 PAIR No. CP16-136

2 PAIR No. CP16-134

6 PAIR No. CP16-135

ONE PAIR No. CP16-133

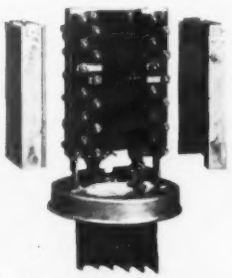
### CAPACITORS TYPE C-1574-1 INDUCTOR

*CEECO LOADING COILS ARE SOLD BY YOUR TELEPHONE EQUIPMENT SUPPLIER*

**COMMUNICATION EQUIPMENT AND ENGINEERING COMPANY**
5646 West Race Avenue — Chicago 44, Illinois
Phone EStebrook 8-3109

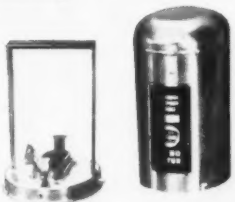
CEECO

PEDESTAL TERMINALS



**TYPE LUG** (Shown With C637A Coils) Complete With Terminal Strips and Protection Side Plates

TYPE LAG—With Bracket For Pole Mounting



TYPE LU (Shown With **CP16-135** 6 Pair Terminal)

**TYPE CBD** Same Construction Only Galvanized

**TYPE LU-1** Wire Terminal

**LA-3** Pole Terminal With CP16-135 Six Pair Ready Mount Terminal Assembly and One C-152-3 Loading Coil

**P-16-147** Pedestal Gasket (Sold Separately)

COMMUNICATION EQUIPMENT AND ENGINEERING COMPANY

5646 West Race Avenue • Chicago 44, Ill.

Phone: EStebrook 8-3109 • Area Code 312

substantive change proposed in the separations manual since 1955, when the modified Phoenix plan was recommended.

The resolution noted the seven-digit nationwide numbering plan for toll dialing in many instances has required "modification or installation of digit absorbing equipment to absorb digits not necessary to complete switching of local telephone calls."

The convention also adopted a resolution emphasizing "the common carrier industry should be encouraged to provide satellite communications in the traditional American way, under regulation, without government subsidy."

The resolution stressed the U.S. "regulated common carrier industry has had years of experience in cooperation with foreign administrations in providing communications service of all types under sound government regulation, and has demonstrated both the capability and willingness to do the job without delay."

As pointed out by the FCC, the resolution said, the nation's "long-standing national policy of placing the responsibility for public communications on the regulated common carrier industry has resulted in the most extensive and efficient communications system in the world."

Satellite communications, the resolution said, offers the U.S. "a most promising opportunity to assert leadership in the field of space endeavors," and added, "The communications users of this nation can benefit immeasurably from prompt establishment of a worldwide satellite system."

Another area of NARUC telephone committee activity has concerned possible submission by the General Telephone & Electronics Corp. of information on sales by its affiliated manufacturing and service subsidiaries to its telephone operating subsidiaries, similar to that now provided by the Bell System — The NARUC group decided to refer the subject back to the staff committee for further study.

On material furnished to the NARUC by GT&E differences between the Bell and General Systems, took the position: "Since Western Electric doesn't compete directly with other companies in the manufacture and sale of communications equipment, and its prices as a consequence aren't fixed and limited by competition, regulatory bodies have through necessity turned to a review of Western's profitability as the only readily available means of gauging the fairness and reasonableness of Western's prices.

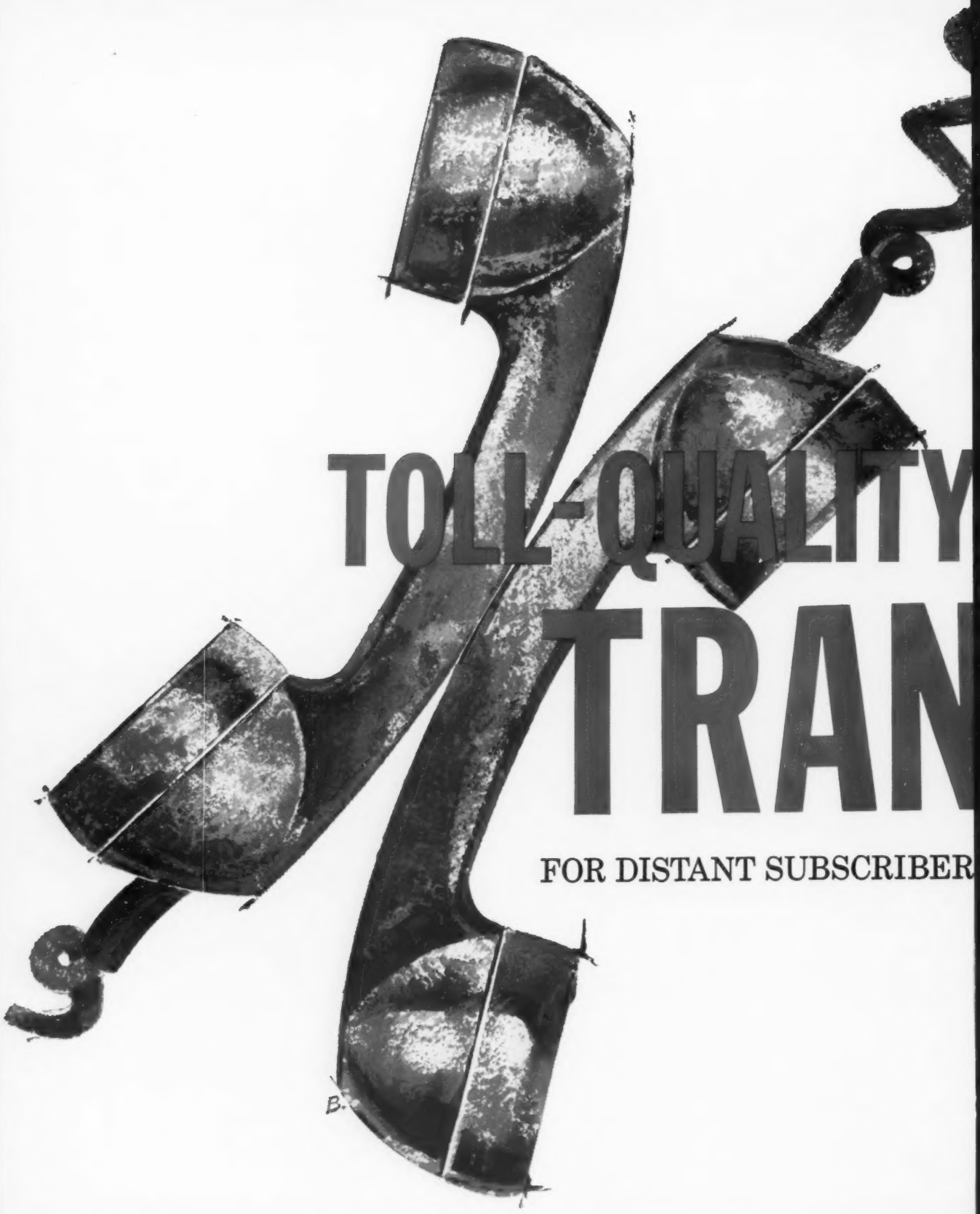
"All of the financial and accounting data which the NARUC committee requires Western Electric to file with it on a continuing basis is aimed at determining Western's profitability and return on investment with the hope through these statistics the fairness and reasonableness of Western's prices can be gauged.

"GT&E maintains that in the presence of competition, prices charged by a manufacturer are fixed and limited by competition, and that a competitive price must of necessity be a fair and reasonable price. Otherwise the manufacturer could not hope to sell its products in competitive markets. Under these circumstances, it's neither necessary nor practical to look to the profitability of a competitive company to gauge the fairness and reasonableness of its prices."

Because of the basic difference between its manufacturing subsidiaries and Western Electric, GT&E maintains it is neither necessary nor equitable to use the same procedures in determining fairness and reasonableness of prices charged by its manufacturing subsidiaries, as applied to to Western Electric.

GT&E also stressed that compilation of such special financial statistics not required in the normal course of business would result in substantial additional expenses to these companies, and public disclosure of the figures would give valuable, confidential information to their competitors.

**Need Help? ? Who doesn't? ? Well, before the solution to a tough operating problem, or the answer to a question, has you talking to yourself, send the troublemaker to TE&M. We'll do our best to come up with the right answer.**



TOLL-QUALITY

TRAN

FOR DISTANT SUBSCRIBER

*when capital is tied-up, and new service demands exist...*

independents start thinking "carrier," in order to get maximum use from existing facilities. And, when you think "carrier," you naturally think "Kellogg"—the leader in carrier design, development and manufacturing. Without a doubt, it's the most complete, and most completely field-tested carrier line in the industry.

ITT Kellogg K-31 and K-32 Carriers offer more exclusive features, yet are lower in cost.

**K-31 RURAL SUBSCRIBER CARRIER**

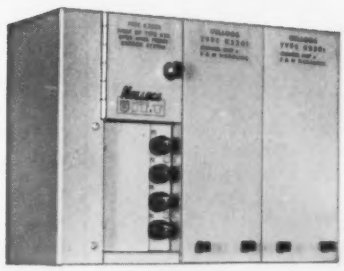
Provides high grade, low cost service between a central office and rural subscribers on single or multi-party lines. Up to 8 channels. Can be utilized to meet future growth needs.

**K-32 OPEN WIRE TRUNK CARRIER**

Provides low cost EAS or toll service between two central offices. Also up to 8 channels.

And now, system mileage can be *doubled* with one low-cost repeater, *tripled* with two repeaters!

Next time you get caught by sudden new service demands, conserve your capital: find out about carriers, from carrier experts. Call your ITT Kellogg representative or write the ITT Kellogg Regional Office nearest you.



# SMISSION

## ...AT LOWER COST THAN OPEN WIRE

...with CARRIER by

ITT **KELLOGG**

A Division of
International Telephone & Telegraph Corporation
6650 South Cicero Avenue, Chicago 38, Illinois

Telephone and Transmission Department
2912 Wake Forest Road, Raleigh, North Carolina

Regional Offices and Warehouses:
**CALIFORNIA:** 23 Broderick Road, Burlingame, California, OXford 7-5780.
**GEORGIA:** 1594 Southland Circle, N. W., Atlanta 18, Ga., SYcamore 4-2441.
**INDIANA:** 802 Knitters Ave., Fort Wayne, Indiana, Eastbrook 4562.
**IOWA:** 1111 East River Drive, Davenport, Iowa, 324-0441.
**KANSAS:** 7th & Sunshine Road, Kansas City 15, Kansas, MAyfair 1-4418.
**NEW YORK:** 309 Wavel Street, East Syracuse, N. Y., HEmpstead 7-2511.
**NEW YORK CITY:** 22 Thames Street, New York 6, BOwling Green 9-3800.
**TEXAS:** 1359 Motor St., Dallas 7, Texas, RIverside 7-5191.

ITT Kellogg products available in Canada
through Standard Telephones & Cables Mfg. Co. Ltd.
9600 St. Lawrence Boulevard, Montreal 12, P.Q., Canada

Suddenly you're a Hero

because it took an "act *of heroism*" to find the most UNUSUAL gift-giving idea for *customers, employees* and *friends* EVER SEEN!

★ ★ ★ ★

... and your customers, appreciating your "*heroics*," would call to say "THANK YOU" for your *unique* and *wonderful remembrance* and thereby open the door to ADDITIONAL SALES! Even your employees showed their appreciation in the many small ways only YOU would understand.

★ ★ ★ ★

If you buy gifts *(between $7.50 and $100.00 each)*, you'll surely want to see this *unusually practical, sensationally simple* and *refreshingly different* way of saying "THANK YOU" to the people who are IMPORTANT TO YOU AND YOUR COMPANY.

WRITE FOR MORE INFORMATION... MAIL THIS COUPON TODAY

Automated Gift Plan, Inc.,
80 Park Avenue, New York 16, N. Y.
TE-12A

Please send further information.

Company _____

Address _____

City _____ Zone ___ State _____

Att _____ TITLE _____

We use approx ____ Gifts in the $7.50 to $100.00 price range

# INDUSTRY OBSERVATIONS

By L. A. GRITTEN

## Rapid Risky Reading

PROPONENTS of rapid-reading tell us the average speed of American adults is fewer than 200 words per minute of moderately difficult reading — no better than that of eighth graders — and that much higher speeds may be attained without loss of comprehension.

A group of Army officer candidates at Maxwell Air Base, during a special speed-reading course, started with an average speed of 253 words per minute. At the end of the course they averaged 443 words per minute.

Speed-reading is not a passing fad. It will be of increasing concern to business executives and a tool in the kit of every personnel manager. Already 30 universities now give reading improvement courses. Bell Telephone Laboratories, Western Electric, and New York Telephone Company are among many great corporations using speed-reading instruction.

Unquestionably, practice and thought will improve your reading in speed and comprehension. You may acquire the trick of grasping the meaning of a whole group of words at a glance, much as a telegrapher hears entire phrases in code, without consciously listening to individual dots and dashes.

But there's danger in the cult, unless continuous and rigorous checks are made of what's learned from such reading — and what's missed. In selected cases, higher speed may not impair understanding; but for general commercial usage, there is a doubt. Much business and professional writing must be read meticulously, digested and re-read; or trouble is invited.

Speed-reading enthusiasts appear to concentrate on an effect and neglect the cause. The villain in the play is verbosity, not slow reading. To distort a famous aphorism: Never in the field of human communication have so many written so much, to say so little.

In the realm of fiction, neither economy of words nor rapid reading is essential. If Adela St. Johns takes a chapter to say what Guy de Maupassant would have covered in a paragraph, why not? If we take an hour to enjoy a tale that others may absorb in 20 minutes, who cares? But in business a prime requirement should be concise expression, capable of rapid understanding.

Everyone who sits at a desk is compelled to waste time and effort in sifting thoughts and facts from verbiage. Too much must be read that should not have been written. Too much that could be said briefly is bloated with words for words' sake.

Lying before us is a digest of state legislation. We quote: "The governor was of the opinion that factual data upon which to predicate such a reduction was not available." Why not: "The governor thought available data didn't justify reduction." — eight words instead of 19? In the aggregate, verbal windiness causes more eyestrain, ragged nerves and misunderstanding than general sessions of the United Nations. Only printers, optometrists and psychiatrists benefit by it.

Before we force the pace in our reading, with the inevitable risk of lost meanings and loose thinking, we should wage bitter war on wordiness.

When we become dictator of these United States, our Ukase No. 1 will provide for the infliction of cruel and unusual punishments on anyone who

# all you need is a cable, a clamp and a pole

## Anaconda Figure-8 Telephone Cable eliminates separate messenger and spinning

You save time at every pole with Anaconda Figure-8 cable, because both messenger and cable are combined under one common Figure-8-shaped jacket that is easily installed into tight-gripping cable clamps. There is no field spinning, no separate messenger reel.

And when you dead end Figure-8 at a pole, there is no end curl or twisting because Anaconda's exclusive "dead" strand is pre-formed to stay put. In fact, "dead" strand eliminates twisting altogether even when you lay cable by the road.

Figure-8 cable is long-lasting. It resists abrasion, scraping, flexing — moisture, heat, and cold. An Anaconda-developed sealing compound prevents moisture migration and corrosion.

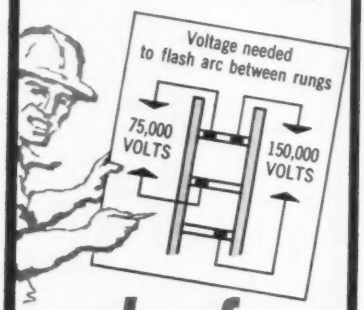
Anaconda makes Figure-8 Telephone Cable with standard color-coded Alpeth or Cupeth constructions, with longitudinal corrugated shields on all sizes for flexibility. Average mutual capacitance is 0.083 mf/mile.

Find out more about Anaconda Figure-8 Telephone Cable. Contact your local Anaconda representative or write to Anaconda Wire and Cable Company, 25 Broadway, New York 4, New York, Department EFL-1-TE. 61331

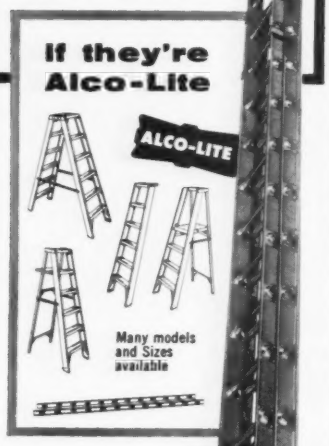
PHONE THE MAN FROM
**ANACONDA®**
FOR FIGURE-8 TELEPHONE CABLE

THE INDEPENDENT MANUFACTURER FOR THE INDEPENDENT TELEPHONE INDUSTRY

# fiberglass ladders are strong




# and safe




*Non-conducting, non-absorbent,* yet strong and light as an aluminum ladder! Power company tests indicate Alco-Lite Fiberglass Ladders extremely safe around high voltages. Resist chemicals, acids, gases, fumes, and moisture.

Alco-Lite Fiberglass Ladders meet ASA Code A14.2 for portable *metal* ladders. The wider side rails are SOLID fiberglass—not plastic covered soft wood. The wide steps and rungs are high tensile strength aluminum. More riveting and bracing throughout!

Ladders safe, strong, more rigid, have longer life, because of exclusive design and construction. Maintenance negligible. *SEND FOR CATALOG!*

Original Manufacturer of ALUMINUM Ladders

**Aluminum Ladder Co.**

West Darlington Street Ext.

FLORENCE 1 S. CAROLINA


writes "considered to be of the approximate order of magnitude of" when he means "about"; and the death penalty with boiling oil shall be mandatory for the publishers of any prospectus that says "should eventually be capable of development into an exceedingly satisfactory and rewarding operation," when "may be profitable" would express their thought.

## "Sail On, O Union . . ."

THE OIL, Chemical and Atomic Workers Union met recently in Chicago. They passed a resolution calling on AFL-CIO to charter a new Union of the Unemployed, to be financed by a monthly tax up to 10 cents a month on other union members now employed. With an AFL-CIO membership of about 15 million this should bring in some $18 million a year.

We feel, as a duty to our creditors, we should get in on this gravy. We plan to form a TE&M Columnists Union and affiliate with AFL-CIO. Then we shall say something real sassy to Editor John Reynolds, get fired and live happily ever after on the handouts from the Union of the Unemployed.

## Vacation Reverie

WE DROVE from the southern end of the Grand Coulee to Chief Joseph Dam, one of the huge Columbia River dams built to furnish power and water to fertilize an arid land. We wondered why, when our government owns with embarrassment more than $9 billion worth of unwanted surplus farm production.

We passed many farm buildings but few crops. In Bridgeport, a merchant angrily explained: "It's the Soil Bank racket. Those soanso's are the most successful farmers on earth. They are paid for non-production — with our money."

At the great dam we wondered why it was named after Chief Joseph. That Nez Perce patriot was bitterly hostile to the U.S. government of his day, and with good reason. He detested its shameful trickery of the Indians. He waged war to escape from broken faith, to win his people's freedom. He outwitted our soldiers time and again by sheer personal leadership. Only the electric telegraph and overwhelming numbers defeated Chief Joseph and saved our generals from humiliation.

Looking down from his happy hunting ground, does Chief Joseph enjoy seeing his name tagged to this monument of government socialism?

## You Are Accused

AT LAST we know who's responsible for the medieval sluggishness of our postal service. The accusing finger points. It is YOU!

At the postmasters' convention in Philadelphia, Postmaster General Day — conceding the superiority of the European mail services — explained European countries have few telephones compared to the United States. Therefore, Europeans need more mail deliveries.

Two logical inferences: You, as the men who have developed the world's finest telecommunications system in this country, are to blame for our slow and infrequent mail deliveries; and the more you improve our telephone service, the worse our mail service will become.

This ties in with the recent prediction of Prof. Warner G. Rice, head of the English Department at the University of Michigan. He says telephones, computers and graphs will take the place of written communications to such an extent that writing in the future will be confined to a few specialists.

In that happy day, the post office can cut us down to one mail delivery a month — and nobody will give a stamp.

## "We Wish To Thank . . ."

TELEPHONE conventions, good ones at all events, don't just happen. They are the product of hard work. But most of those who enjoy them do not know who did the work. The Iowa Independent Telephone Association is doing something about that. It issues a 4-page brochure of acknowledgment and thanks, with photographs of those whose efforts made the convention a success. That idea is worth copying.

## *MORE FOR YOUR DOLLAR...*

# AN EXIDE POWER PACKAGE

*The battery you need*

*The charger you need*

*The service you need*

Ask your Exide man which battery type will give you the greatest economy and you can expect an answer based on engineering fact. Because only Exide offers you so broad a range of battery types—broadest in the field. It includes pasted plate Tytex with Silvium* or calcium, long-life Exide-Manchex Planté with Silvium, low-maintenance pocket positive nickel-cadmium, and the new 20-year Exide-Ironclad tubular with Silvium.

But total power economy also depends on the charger and service. Which charger? New Exide silicon rectifier types are available in a range of sizes to meet any application needs. High efficiency means you get the maximum charging power per dollar of cost.

Wherever you are, Exide service is nearby—with over 200 factory-trained battery specialists coast to coast. It's all part of the Exide power package. Find out how it can benefit you. Write Exide Industrial Marketing Division, The Electric Storage Battery Company, Philadelphia 20, Pa.

**Silvium is Exide's patented corrosion-resistant grid alloy*

Exide®

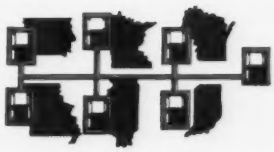
*INDUSTRIAL MARKETING DIVISION*
**The Electric Storage Battery Co.**

ESB

*new revenue maker from AE*

# *ELECTROWRITER® lets your customer write a phone call*

INTER-OFFICE COMMUNICATION



INTERSTATE COMMUNICATION

ANY NUMBER OF STATIONS, ANY DISTANCE

Just think of it. A written message transmitted with the speed and dependability of a phone call! What businessman could resist this useful, time-saving instrument?

With Electrowriter, your customer simply writes or sketches his message just as he would any note —using an ordinary ball pen and paper. Instantly, that message is reproduced by any desired number of receivers, any distance away.

Electrowriter systems use regular telephone lines for transmission. That means greater use of your existing facilities, installation of new facilities... more revenue! And, Electrowriter is simple to install. Each instrument is fully transistorized and self-contained. No special power supply is required.

Who are prospects for Electrowriter? Restaurants, hotels, transportation companies and any plant that needs a better system of inventory or production control. Your AE representative has the full story on Electrowriter. For further details, contact him, or write: Automatic Electric Sales Corporation, Northlake, Illinois.

**AUTOMATIC ELECTRIC**

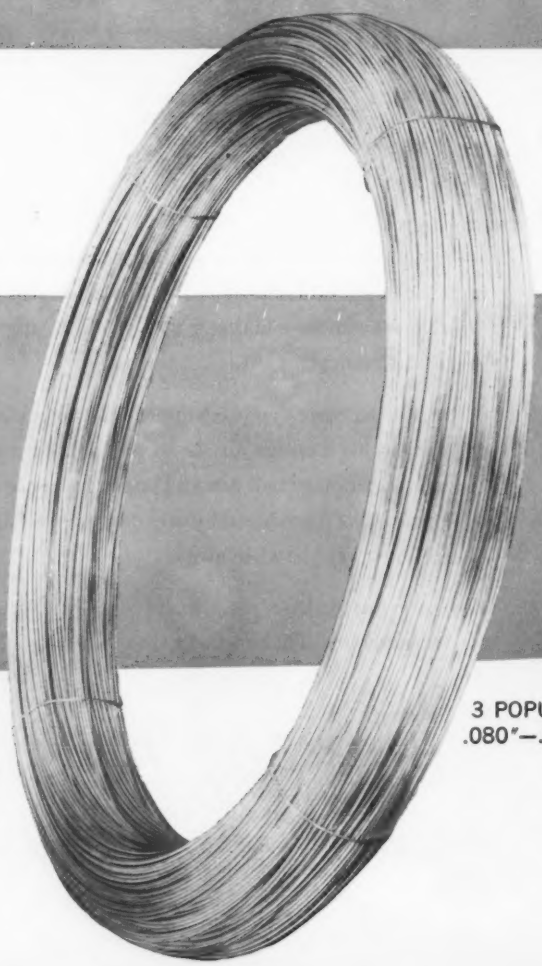
Subsidiary of

**GENERAL TELEPHONE & ELECTRONICS**

GENERAL SYSTEM

# GOOD NEWS

## FOR RURAL TELEPHONE



***ALUMOWELD*** TELEPHONE LINE WIRE is protected by a *thick* cladding of pure aluminum—25% by area—that gives it the same long life as solid aluminum. Applied by the unique atomic-welding process, this aluminum covering is inseparably welded to the high-tensile steel core. Since the steel core is never exposed to deterioration, the original wire strength is permanently maintained.

3 POPULAR SIZES
.080″—.091″—.102″

CONSTRUCTION

# Leader in bimetallic wire now makes a low-cost aluminum-covered steel wire for rural telephone lines...

ALUMOWELD

**for EXTRA-LONG SPANS!**



Now—with newly developed Alumoweld Telephone Line Wire—operators of rural lines, and their subscribers, can benefit from the important advantages that Alumoweld construction offers.

Size for size, Alumoweld is as strong as steel, yet weighs less and will last far longer. Its high tensile strength—nearly 200,000 lbs. per square inch—provides a maximum margin of safety for extra-long spans with attendant savings in poles, hardware and man-hours. Alumoweld's light weight—approximately 75 lbs. per mile for the .080-inch size—means easier, faster handling plus worthwhile reductions in installation and shipping costs. Equally important is the fact that Alumoweld is available at a price competitive with the least expensive line wire.

With a conductance about three times that of steel, Alumoweld Line Wire has permanently good talking qualities—an advantage your subscribers will appreciate. Alumoweld is also ideal for subsequent conversion to carrier circuits without additional investment in overhead lines.

Plan now to build your rural lines with Alumoweld Line Wire. For prices, sag data and staking tables, write us today—no obligation.

COPPERWELD STEEL COMPANY
WIRE AND CABLE DIVISION *Glassport, Pa.*
For Export: COPPERWELD STEEL INTERNATIONAL COMPANY, New York
Canadian Distributor: NORTHERN ELECTRIC COMPANY LIMITED

ALUMOWELD®

**TELEPHONE LINE WIRE**

**SOLD BY LEADING DISTRIBUTORS**

*Warehoused at Strategic Locations*

"Mechanize" Line Maintenance with

# CHANCE POWER TOOLS

*...save time and effort*

Chance power tools operate from air or hydraulic power. Air-powered tools operate from an air compressor or bottle of $CO_2$ or dry nitrogen. Hydraulic-powered tools operate from the standard hydraulic source of the insulated bucket mechanism, truck "A" frame or winch. The line includes pruners, saws, brush cutters, cable cutters and guy strand cutters.

Linemen like the way these tools do their work with just a press of the thumb on the trigger. Their light weight makes them easy to handle in buckets or on a pole. You gain by getting maximum utilization of your skilled line personnel.

*Ask your Chance man for Power Tool information, or write for Bulletin 635.*

CT61-28

A. B. CHANCE CO.

CENTRALIA, MO. • EMpire 2-2121

A. B. Chance Co. of Canada, Ltd., Toronto


## 50 YEARS AGO IN TE & M

■ The TE&M editorial stated: "*Today, trouble hunting on a telephone line is almost fun — an interesting experiment, of whose result we are sure. The test set is a veritable Sherlock Holmes in its swift accurate indication of the unseen fault . . . Every telephone man should use all the aids science can give him. Then he would find that 'trouble' was trouble no longer.*"

■ Wanda Kelly, the telephone girl in William C. de Mille's play "The Woman," a play written to show how the telephone dominates and controls the destinies of men and women, explained the theme by saying: "*One of the big central telephone stations is the world — all boiled down and spread out on the switchboard and right there on that board thousands of people are meeting, their thoughts crossing each other — and the 'Hello Girl' is perched on top of a high mountain looking at them. That's the real world — and it's all on the board, good and bad, winners and losers, rich and poor, all mixed up together, all going on at once. And the operator is a sort of Fate who sees that the right people get each other.*"

■ The United Telephone Co., Abilene, Kans., was formed by the merging of the Brown Telephone Co., Abilene, Kans., the Concordia Telephone Co. of Concordia, the Solomon Valley Telephone Co. of Beloit, and the Smith & Flint Co. of Minneapolis. Capital stock of the combined companies was $500,000. Officers were: Pres., A. J. Rodgers, Beloit; Vice Pres., G. A. Rodgers, Beloit; Sec.-Treas., C. L. Brown, Abilene.

# *There's a lot more to the NEW FLOTROL RECTIFIERS than silicon diodes!*

Lorain has not just designed for silicon diodes. The idea of improving on the already established, reliable, selenium-rectifier FLOTROL units beyond the mere incorporation of silicon diodes was a challenge to our engineers. In accepting this challenge an entirely new approach, both mechanical and electrical, was in order. From this work a radically new unit having improved physical and mechanical features and having highly advantageous, new electrical characteristics has been developed.

**FROM THE PHYSICAL AND MECHANICAL STANDPOINT THE NEW UNITS ARE OUTSTANDING**

The attractive appearance speaks for itself.

All operating controls, operating alarm lamps and breaker switches are placed at a single, convenient location—on the meter panel at the front of the unit.

All terminations are convenient, safe and adequate—for utmost simplicity of installation.

Component location and cabinet design have both been carefully considered—all components are readily and conveniently reached by the mere removal of a cover. Both plug-in and hinged mounting of components are utilized—the new FLOTROL rectifiers are the ultimate in accessibility for service.

**ELECTRICALLY, THE NEW MODELS ARE SUPERIOR**

TRANSFORMER TAP SIMPLIFICATION—screwdriver shaft adjustment takes care of the entire range of output voltage—transformer taps are used only for line voltage adjustment.

FAIL-SAFE—batteries and office equipment are protected against any type of failure. The unit shuts off or the output voltage drops upon failure in the circuit.

SOMETHING NEW IN ALARMS—in all three-phase and large single-phase units, the auxiliary circuits are individually alarmed with alarm-type magnetic circuit breakers adapted to operate the office alarm as well as the alarm lamp on the meter panel. Upon tripping of any of the critical circuit breakers the rectifier is automatically shut down.

THE RADICALLY NEW CIRCUITRY results in reduction in the size of the units—improved performance—protection of the silicon diodes against starting and load surges—frequency compensation—load sharing paralleling with other FLOTROLS and with motor-generator sets—temperature compensation for operation up to 55° C. ambient.

As usual in Lorain design, all components are conservatively rated for maximum dependability.

**MANY MODELS—ALL COMPACT AND RELIABLE**

THREE TYPES
- CHARGERS
- ELIMINATORS
- CHARGER-ELIMINATORS

- **25, 50, 140 AND 260 VOLTS**
- **2 TO 400 AMPERE CAPACITY**
- **SINGLE PHASE AND THREE PHASE**
- **FLOOR, RACK AND WALL MOUNTED**

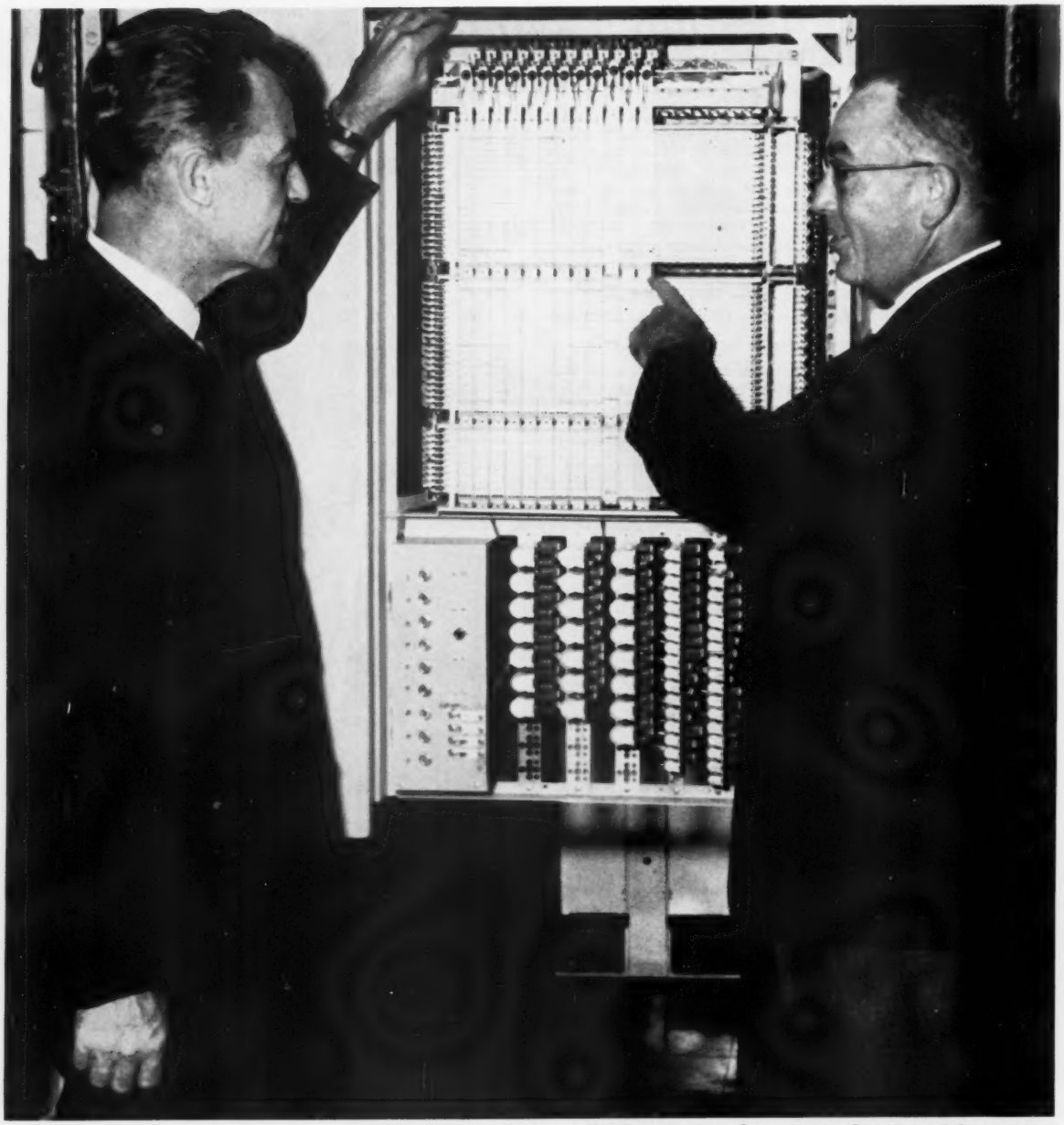
**LORAIN EQUIPMENT IS ALSO MADE IN CANADA, BY CANADIANS, FOR CANADIANS**

**LORAIN** *Products Corporation* LORAIN, OHIO

LORAIN PRODUCTS (CANADA) LTD.—ST. THOMAS, ONTARIO

DESIGNERS AND MANUFACTURERS
SUB-CYCLE® CONVERTERS FLOTROL® RECTIFIERS
PARTNERS IN DEPENDABILITY

# "WE SAVED



Exchange Unit for Leich Line Concentrator. Shown are (left to right)
J. H. Shultz, General Manager and Arthur F. Brubaker,
Plant Superintendent, Rochester (Ind.) Telephone Co., Inc.

LEICH GENERAL SYSTEM
Subsidiary of
GENERAL TELEPHONE & ELECTRONICS

# $12,000 WITH LEICH'S LINE CONCENTRATOR"

*REPORTS MR. ARTHUR F. BRUBAKER, PLANT SUPERINTENDENT*
*ROCHESTER TELEPHONE COMPANY, INC., ROCHESTER, INDIANA*

"By installing Leich's Line Concentrator instead of cable, we saved $12,000!" reports Mr. Arthur F. Brubaker. "We were able to add lines for new subscribers and reduce the number of subscribers per line at a cost much lower than cable relief."

The cost-cutting story: Mr. Brubaker needed more circuits in an area northeast of Rochester, Indiana. Since 24 pair of the existing 26 pair cable were in use, he would normally have had to add another 26 pair cable at a cost of about $17,000.

The *installed* cost of a 49-12-3AZ Leich Line Concentrator, including weatherproof cabinet for the subscriber unit, was only $5,000. Instead of serving each line over a separate wire pair, it concentrates a number of subscriber lines over a much smaller "high usage" trunk group.

It used 15 pairs (12 traffic trunks and 3 control trunks) of the existing 26 pair cable to furnish 49 lines—28 in service and 21 available for future growth. Four of the remaining original eleven pairs were used as high usage lines in the area, leaving seven spare pairs. Mr. Brubaker increased his original 26 lines to a total of 60—for a net gain of 34 lines!

You can benefit with Leich's Line Concentrator, too. To learn how, just send in the coupon.

Pole-mounted Subscriber Unit for Leich Line Concentrator.

**FREE 12-page catalog of FACTS AND FIGURES**

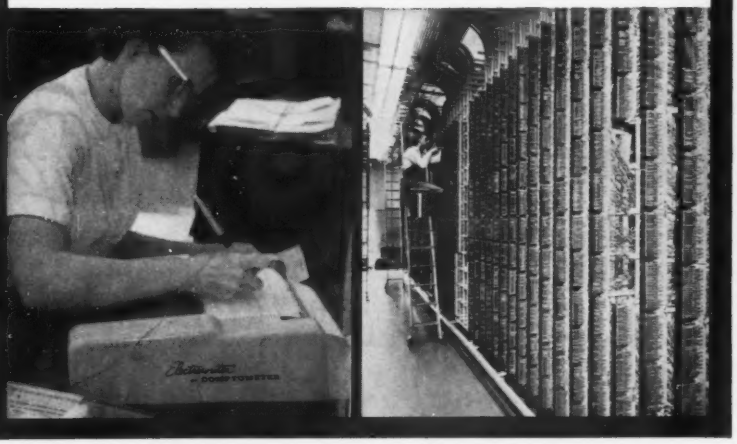
LEICH SALES CORPORATION
427 West Randolph Street, Chicago 6, Illinois

Please send me____ copies of "The Leich Line Concentrator" catalog which includes typical applications, installation data, principles of operation, and ordering information.

Name_____
Title_____
Company_____
Address_____
City_____ State_____

LEICH SALES CORPORATION • 427 WEST RANDOLPH STREET • CHICAGO 6, ILLINOIS
PACIFIC COAST: 11401 W. PICO BLVD., LOS ANGELES 64, CAL. EAST: 3651 CONNECTICUT AVENUE, YOUNGSTOWN, OHIO
SOUTHWEST: 1227 SLOCUM STREET, DALLAS 7, TEXAS SOUTHEAST: 5126 SOUTH LOIS ST., TAMPA 11, FLORIDA • 2915 W. MOORE ST., RICHMOND, VA.
**manufacturers of telephones, switchboards and related apparatus since 1907**

# Electrowriter® System expedites assignments for General Telephone of Florida



Electrowriter instruments play an important role in prompt, accurate customer service for the General Telephone Company of Florida at St. Petersburg.

The dispatcher writes authorizations for new and changed telephone numbers directly on the Electrowriter Transmitter; these authorizations are instantaneously recorded in writing by the Central Office's Electrowriter Receiver, four miles away, where wiring and switch racks are located.

Results? Assignments handled quicker, in writing, requiring only one person's time. Substantial saving in manhours are achieved. Busy frame men are no longer interrupted to receive assignments, for the Electrowriter Receiver takes written messages unattended. And permanent, written records streamline record-keeping.

**NOW..."Write By Telephone"**

You can "Write By Telephone" over regular dial networks* or private lines for alternate written message and voice service. Find out how your company can increase its efficiency and cut costs with Electrowriter Communication Systems. Send for full information.

*Electrowriter instruments are accepted for use over local and long distance facilities of the Bell System, General Telephone System, and independent telephone companies.

® ELECTROWRITER TRADEMARK REGISTERED U.S. PATENT OFFICE

**Electrowriter® SYSTEMS**
by **COMPTOMETER**

sold nationally to the independent telephone industry by:

**AUTOMATIC ELECTRIC SALES CORP.**
400 N. Wolf Road
Northlake, Illinois

**LEICH SALES CORP.**
427 W. Randolph St.
Chicago 6, Illinois

**Comptometer Corporation**
**5600 Jarvis Avenue**
**Chicago 48, Illinois**

### *"Democracy"*

"We in the United States usually assume that if we carry democracy to another country the people will welcome it with open arms, make it work effectively and resist the temptations which threaten to destroy it. This is not always true. Democracy must be earned and it must be both desired by the people and understood by them. It requires the support and intelligence of the masses to succeed." — *Mt. Pleasant (Pa.) Journal.*

### *Even a Small Dog!*

"If you think you have influence, try ordering someone else's dog around." — *Vista (Calif.) Press.*

### *. . .Or Remember It*

"There is only one thing wrong with the younger generation. A lot of us don't belong to it any more." — *Ovid (N.Y.) Gazette and Independent.*

### *What's in a Flag?*

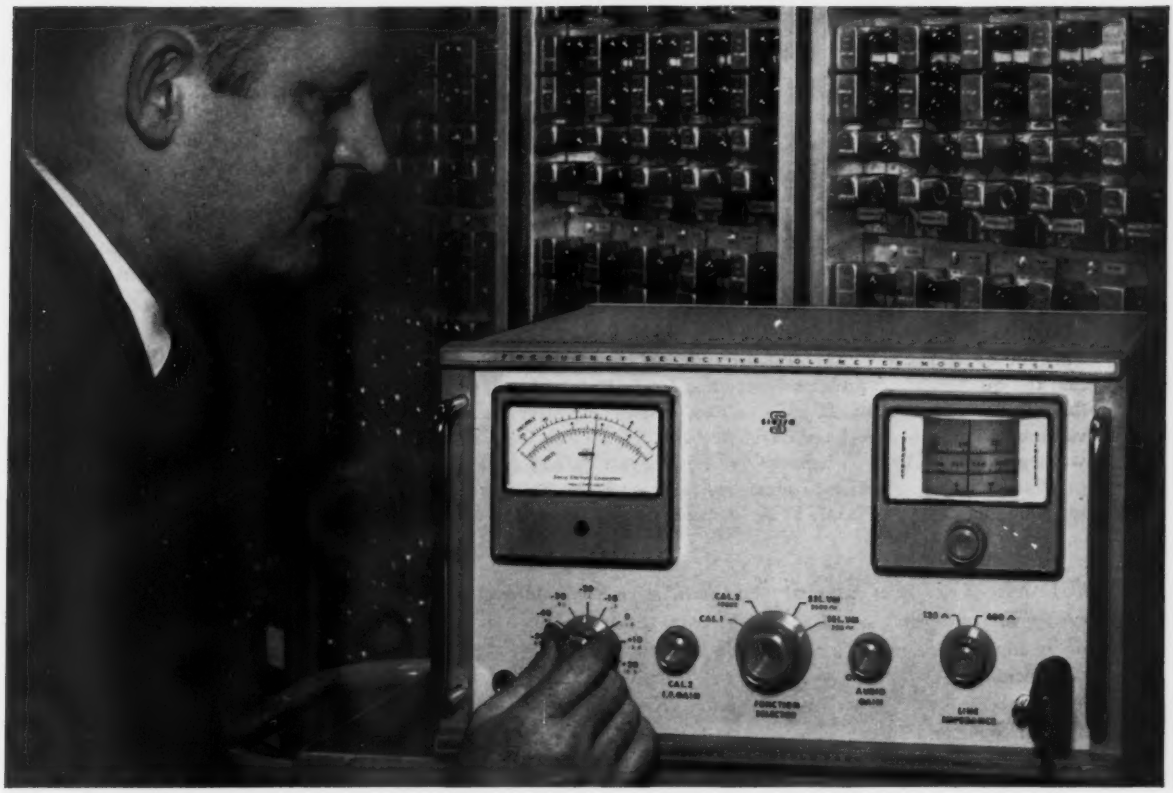
"An American and a Dutchman were talking. 'What does your flag look like?' asked the American.

" 'It has three stripes,' said the Dutchman, 'red, white and blue. We say they have a connection with our taxes. We see red when we talk about them, white when we get out the bill and we pay till we're blue in the face.'

" 'That's how it is here,' said the American, 'only we see stars, too'." —*Wadesboro (N. C.) Messenger & Intelligencer.*

### *Thoughts Overpriced?*

"Despite inflation, a penny for most peoples' thoughts is still a fair price." — *Canova (S.D.) Herald.*



# Why is the Sierra Frequency Selective Voltmeter the standard of the communications industry?

**Performance-proved by thousands of users! • Accepted by all major carrier systems manufacturers, specified by most! • Uniquely convenient, versatile, dependable for monitoring carrier modulation level!**

- Single frequency band, one continuous tuning range—eliminates band switching
- Flat voltmeter section—for accurate measurement, easy detection of spurious signals
- Wide bandwidth—1 to 620 kc—covers 120 channels per L carrier allocation
- Coarse, fine tuning on a single knob—for greater convenience
- Crystal controlled calibration oscillator—for checking both frequency and level
- Domestically produced—for years-ahead engineering, rugged construction
- Dual selectivity—versatility for communications test, wave analysis, general lab use

## SPECIFICATIONS
### MODEL 125A

**Frequency Range**
Tunable Mode: 3 kc to 620 kc
Flat Mode: 1 kc to 620 kc

**Measurement Range**
Tunable Mode: —90 dbm to +32 dbm
Flat Mode: —30 dbm to +32 dbm

**Selectivity**
Narrow: Down 3 db 125 cps off resonance; down 45 db 500 cps off resonance
Wide: Down 3 db 1.25 kc off resonance; down 45 db 5 kc off resonance

**Price** $895.00, f.o.b. factory

Call your Sierra representative or write direct. Sierra Model 125B-CR, with upper and lower sideband carrier re-insertion, and Model 125B-Y, with patchcord connections for type "O" and type "N" Western Electric carrier, also available at additional cost.

Data subject to change without notice.

sierra

**SIERRA ELECTRONIC CORPORATION**
*A Division of Philco Corporation*
7127Y BOHANNON DRIVE • DAvenport 6-2060 • Area Code 415 • MENLO PARK, CALIF., U.S.A.
**Sales representatives in all principal areas.**
**Canada: Atlas Instrument Corporation, Ltd., Montreal, Ottawa, Toronto, Vancouver.**
**Export: Frazar & Hansen, Ltd., San Francisco.**

7127

# SEND YOUR PROBLEMS TO TE&M

**A glance through the mail received daily at TE&M's office is enough to prove that readers all over the world bring their problems and questions to TE&M. And we're happy they do. Believing that the questions and problems presented by TE&M readers, and the answers prepared by TE&M's editors, will be of interest and value to all readers, we have developed this TE&M feature, and we hope you will use it whenever you need a fast correct answer to a question, or a solution to some operating problem. Send your questions to: *Editor, TE&M,* 7720 *Sheridan Rd., Chicago* 26, *Ill.***

QUESTION: *What new ways of serving the customer have been adopted by some of the nation's telephone companies?*

ANSWER: We could write a short book on this subject. However space won't allow it. But here's a rundown on a few procedures some companies have used successfully:

(1) Installing telephone service on Saturday, if the customer finds this day more convenient.

(2) Taking customer requests for same-day or next-day installation.

(3) Tightening up on repair service commitments and working with engineering to give customers the grades of service they want and when they want it. Studies of customer comments pinpoint areas where need is greatest.

(4) Stimulating cooperation between plant, traffic and commercial in possibilities for pleasing service on such ordinarily difficult situations as those resulting from repair service calls.

(5) Furnishing information operators with listings for non-published numbers so they can tell callers the customer asked that his name not be given. Formerly, operators in many companies had no such listings and no knowledge of non-published working numbers.

(6) Having operators answer after the first cycle of a recorded announcement on intercepting, instead of waiting until after a second cycle to advise a customer to stay on the line if he needed help.

(7) Emphasizing better tone of service by operators in complying with requests of customers unless the operators know of a good reason for not doing so.

(8) Not verifying requests to charge long-distance calls to third telephones.

(9) Urging closer cooperation between commercial and marketing departments with the plant department to speed installations of business service.

(10) Making directory changes. In smaller directories some companies print police and fire department numbers on the first page. Other firms have added a classified heading to list services available for large shopping centers.

(11) Suggesting more specific appointments for installations ("after 3 p.m.," for example) or making same-day appointments when asked; and using more flexibility in handling special situations, such as illness or other unusual requests for service.

(12) Re-examining rules at point of customer contact to make sure strict interpretation won't result in unfairness.

(13) Enabling customers who need to reach telephone people after 5 p.m. to do so through additional directory listings.

These methods are a sampling of many new procedures telephone companies are developing every day to serve customer needs. Perhaps, your firm has a few examples it might want to offer to the communications industry through TE&M.

QUESTION: — *We have equipment of various types that use transistors. Under some circumstances these transistors seem to be delicate and tend to break down. Can you explain cause and give us a remedy?*

ANSWER: — In some ways transistors are durable. In other ways they are fragile. They can take shock and vibration to a greater extent than ordinary radio tubes, but are very sensitive to heat, direct current flowing in the wrong direction or excessive biasing voltages, and will lose their ability to amplify.

Too high a voltage, an improperly applied soldering iron, or a poor connection to a heat sink — as well as exposure to high external temperatures — will produce heat at the junction and will destroy transistors. In replacing them, great care must be taken to see they are properly connected.

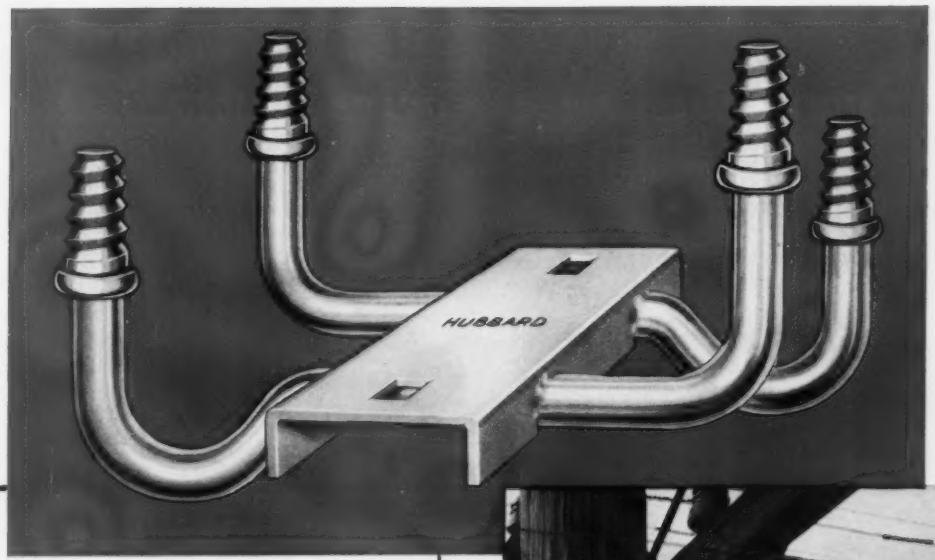
There are two types of transistors: the NPN, and the PNP. Current flow in the NPN transistor is opposite to that in the PNP type; and care must be taken not to use the wrong type in an amplifier stage.

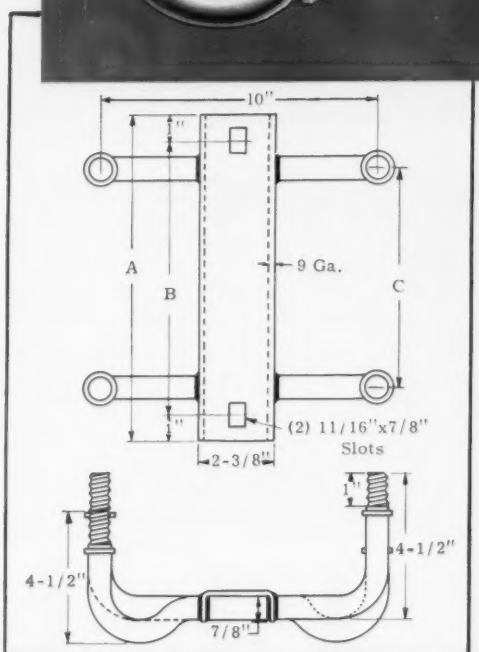
When replacing a defective transistor, turn off the power supply. After connecting the new transistor unit, be sure equipment components are properly connected to carry the load before turning the power back on. Excessive heat from a soldering operation can be avoided by using long-nose pliers on the leads between the transistor and the point to be soldered. Pliers will pick up the heat from the soldering iron.

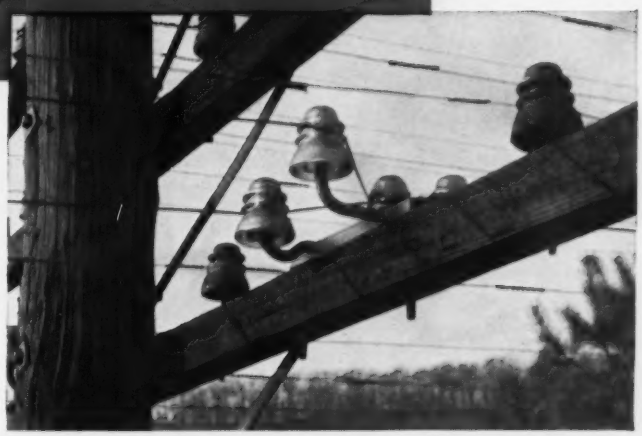
In regard to voltages, even a momentary high-voltage spike will destroy transistor action. Thus transistors connected to a telephone line can be exposed to high peak voltages of short duration, such as electrostatic charges. Regular telephone protectors are not adequate to prevent peaks, and gas-type tubes should be used for protection devices.

# STRONGER... *Lighter...*

## TO MEET YOUR TRANSPOSITION NEEDS



| Stock No. | A | B | C | Weight Pounds Per 100 Pieces |
|---|---|---|---|---|
| 9227 | 12" | 10" | 8⅜" | 650 |
| 9228 | 14" | 12" | 10⅜" | 690 |
| 9238 | 10" | 8" | 6⅜" | 615 |

This new point-type transposition bracket was developed recently in order to combine maximum strength with minimum weight, thus assuring trouble-free service under the most adverse operating conditions. Although the function of this type bracket remains unchanged, the physical characteristics differ considerably from earlier designs as a result of modern, all welded construction.

This style bracket was designed for spindle threaded insulators and is mounted by means of two ⅝-inch carriage bolts (not included). Crossover clearance is 1-inch.

The point-type transposition bracket is but one of many styles available. Contact your nearest Hubbard representative for further details on this and other designs.

**HUBBARD AND COMPANY**
**CHICAGO 50, ILLINOIS**

C1534 FLEETSIDE PICKUP ▲

C1504 STEPSIDE PICKUP ▲

R1254 RAMPSIDE PICKUP ▼

K1534 4-WHEEL-DRIVE FLEETSIDE PICKUP ▲

C1416 CARRYALL ▼

FROM CHEVROLET'S NEW WORLD OF WORTH!

# JOB-MATCHED CHEVROLET TRUCKS FOR '62

## NEW POWER! NEW EYE APPEAL! CHEVIES FOR EVERY CHORE

From Chevrolet's broader-than-ever 1962 lineup of trucks for every kind of hauling job comes a full roster of better-than-ever light-duty models, specialists at trimming tough jobs down to size in short order. Here are new models and new power choices to meet a wider range of working needs, plus a trim new look for all conventional models that gives you safer seeing down the road! Now it's easier than ever to get Chevrolet's traditional thrift and dependability going for you, in the model tailor-made for your kind of job. There are work-loving pickups in a full range of sizes and weight ratings, in sleek Fleetside and handy Stepside styles, plus sensational Corvair 95 Rampside and Loadside models built to outwork anything in their class. In addition, there's the biggest choice ever of *choice* delivery models, including smart, fleet-stepping panels, high-capacity Step-Vans for every job up to 10,000 lbs. GVW, and the wonder-working Corvair 95 Corvan. For specialized requirements there are sturdy stake models and chassis-cabs in every size and weight class, rounding out a selection sure to include a better way to do *your* job! Why not see your nearby Chevrolet dealer for full details on the model made for you, and start finding out right away how much better business can be. . . . Chevrolet Division of General Motors, Detroit 2, Michigan.

**NEW EASY-VIEW STYLING**—For 1962, all conventional pickups, panels and Suburban Carryall models ride in with trim new look-ahead lines, featuring a new hood design sloping lower at the front to let you see the ground as much as 8½ feet closer. Safer, easier viewing results! Also, there's a handsome new grille, new custom exterior trim, and sparkling new colors. Inside, too, things are looking better for the man at the wheel, with new easy-to-live-with colors and tough good-looking upholstery.

**NEW STEP-VAN 7**—Here's good news—211 cubic feet of it!—for light-duty delivery operators with high-bulk lading problems. And Chevrolet's new Step-Van 7 is built to give your bulky loads a better ride, too, on the years-ahead Independent Front Suspension chassis design that's revolutionized the conventional truck field. With the big-saving High Torque 235 Six under the engine box, there's plenty of power to take your tightest schedules in stride, and a long list of better built body features adds up to easy work and extra-long working life.

**NEW HIGH TORQUE POWER**—New wider power choice for '62 lets you match your job needs better than ever, in all conventional pickup, panel and Carryall models. There's the standard-equipment 235 Six, cornerstone of the Chevrolet reputation for unbeatable operating economy, and the spirited, ultra-efficient 283 V8 for premium payload punch. *And now, in addition, the heavy-duty 261 Six is available at nominal extra cost, offering an extra measure of stamina and durability to keep on delivering in the roughest, toughest kind of duty.*

**JOB-TESTED CORVAIR 95's**—They've got a year of enthusiastic acceptance behind them and they're still the talk of light-duty trucking! Chevrolet's sensational Corvair 95 models, in two pickup styles and the spacious Corvan, have set new standards for space and weight utilization in the half-ton field. With a roomy driver compartment up forward and the compact, perky 145 Six tucked under the load floor at the rear, the space between goes to work in a way conventional designs can't match. And, to top it off, this new way to work comes in as pretty a package as ever came down the pike!

**YOURS FOR THE ASKING . . . FREE INFORMATION**

Use this convenient ordering coupon to get descriptive literature and specifications on new 1962 Chevrolet trucks to match your job. Just check what you would like, fill in your business address and mail to: Chevrolet Motor Division, P.O. Box 7271, Detroit 2, Michigan.

Please send:
1. Full-Line Brochure..... ☐
2. Corvair 95 Models..... ☐
3. Pickups & Light-Duty.. ☐
5. Suburban Carryalls.... ☐
6. 4-Wheel-Drive Models.. ☐
7. Medium- & Heavy-Duty Models..... ☐
8. Diesel-Powered Models. ☐
9. Tandem Axle Models... ☐

75

Name _____

Title _____

Company _____

Address _____

City _____ Zone _____

County _____ State _____

# 1962 CHEVROLET JOBMASTER TRUCKS

CHEVROLET

# *Pioneers in* CONTINUOUS FEED PRESSURE SYSTEMS & MAINTENANCE EQUIPMENT

## AUTOMATIC REFRIGERATION DEHYDRATORS MODEL "FD" SERIES

These are completely automatic units with an air receiver and intermittently running compressor. Many safety features are provided.

| Model | Capacity |
|---|---|
| FDL | 750 SCFD |
| FDM | 1500 SCFD |
| FDH | 3000 SCFD |

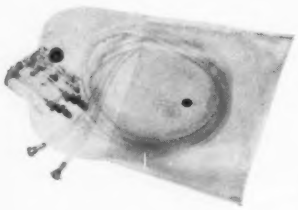
***Write for Bulletin No. FD-1-61***

## AUTOMATIC DESSICANT DEHYDRATORS MODEL "RC" SERIES

These are completely automatic units with an air receiver and intermittently running compressor. Many safety features are provided.

| Model | Capacity |
|---|---|
| RC | 750 SCFD |
| RCA | 1500 SCFD |
| RCH | 3000 SCFD |

***Write for Bulletin No. RC-1-61***



## AIR FLOW INDICATOR PART NO. 8177

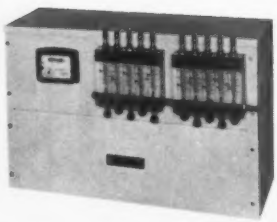
An invaluable accessory for use in locating leaks in telephone cables under air pressure — comes in its own plastic case. Many other accessories and plastic air supply lines are available for pressurizing systems.

***Write for Bulletin No. 8177-1-61***

## CABLE REEL PRESSURE ALARM PART NO. 8279

Used when cable is plowed in under pressure. When cable sheath is damaged in process of plowing in, the alarm will sound indicating damage of sheath and location can be marked and damages repaired.

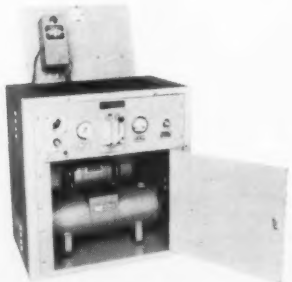
***Write for Bulletin No. 8279-1-61***



## FLOW METER PANEL PART NO. FMP. 10

Wall mounted, gives visual reference of how much each cable is consuming plus a volume record meter for the total output of the unit. Each individual flow meter has manual shut-off valve.

***Write for Bulletin No. FMP 10-1-61***



## MICRO-WAVE & CDO DRYER

Available in two sizes:
Model MWD-200
Model MWD-350

***Write for Bulletin MWD-1-61***

# S&G MFG. CORP.

1017 MAGAZINE STREET • NEW ORLEANS 10, LA. • JA 5-3142

S & G EQUIPMENT MEANS QUALITY, ECONOMY AND DEPENDABILITY

CLYDE S. BAILEY, re-elected USITA executive vice pres. (left) and C. C. PEARCE, retiring USITA president (center), meet with FRANK G. LA PRADE, newly elected USITA president.

# U. S. I. T. A. Holds 64th Annual Convention

**Over 3,300 members of the Independent telephone industry attend U.S.I.T.A.'s 64th annual convention. Frank G. La Prade named U.S.I.T.A. president.**

By JOHN G. REYNOLDS
**Editor, Telephone Engineer & Management**

■ THE TOP EXECUTIVES of the nation's 3,190 Independent telephone companies moved into Chicago's Conrad Hilton Hotel, October 9, 10, 11 for the 64th annual convention of the United States Independent Telephone Association (USITA), and participated in a three-day meeting featuring speakers who, in some instances referred to the past, but mainly directed the attention of their listeners to the communication systems of today and tomorrow.

Featured speakers at the general sessions included USITA President Clifford C. Pearce, Riceville, Ia.; W. R. Jarmon, chairman of the USITA Settlements Committee, New York City; the Honorable Peter E. Mitchell, junior past president, National Association of Railroads & Utilities Commissioners, and a member of the California Public Utilities Commission, San Francisco; and the Honorable Brooks Hays, Assistant Secretary of State for Congressional Relations, Department of State, Washington, D. C.

**Next page, please**

Features included two general sessions; six technical conferences — Accounting, Commercial, Engineering, Plant, REA Borrowers, and Traffic; the annual meeting of the Independent Telephone Pioneer Association (ITPA) which was highlighted by a social hour honoring Mrs. Mayme Workman, Springfield, Ill., who will retire as executive secretary of the ITPA on December 31; the annual USITA banquet; and two floors of exhibits of telephone equipment and supplies.

The last general session on Oct. 11 featured the premiere showing of the new motion picture "The Independents." This excellent pictorial record of the Independent telephone industry was produced under the supervision of the USITA Advertising Committee by Parthenon pictures of Hollywood.

According to Advertising Committee Chairman Hugh A. Barnhart, Rochester, Ind., the picture will be suitable for use by USITA member companies for presentation at meetings of service clubs, Chambers of Commerce, women's organizations, high schools, investor groups and other public bodies. Information is available from USITA's Washington office regarding reprints of the movie and their cost.

### USITA Officers & Directors

ELECTION of 12 USITA directors for three-year terms took place on Wednesday, Oct. 11. Terms of the following directors expired in 1961: J. B. Atherton; E. G. Bellamy; C. D. Brorein; J. C. Hageman; A. L. Hart; P. H. Henson; H. G. Payne; C. C. Pearce; R. E. Rudolph; K. L. Schroeder; H. M. Stewart; and H. W. Vaughan.

**USITA President-Elect FRANK G. LaPRADE (center) Martinsville, Va., meets with Retiring USITA President CLIFFORD C. PEARCE (left) Riceville, Ia., and HUGH A. BARNHART (right) Rochester, Indiana.**

Industry members elected to three-year terms on the USITA board of directors are Mr. Atherton; Mr. Bellamy; Mr. Brorein; Mr. Hageman; Mr. Henson; Mr. Payne; Mr. Pearce; Mr. Rudolph; and Mr. Stewart.

T. A. Saunders, Muskegon, Mich.; Max Wettstein, Ocala, Fla.; and Clare Williams, Marion, Ohio, were elected directors of USITA. They succeed Mr. Hart, Mr. Schroeder, and Mr. Vaughan.

At the organization meeting, the directors named

*Please turn to page 80*

**New USITA President FRANK G. LaPRADE (bottom right) Martinsville, Va., meets with his Washington, D. C. staff: Executive Vice President CLYDE S. BAILEY (bottom left); and back row (l. to r.) Secretary COURTNEY S. SNYDER; MERVIN ALEXANDER; and THOMAS R. WARNER.**

Registration desk at Conrad Hilton Hotel, Chicago, was one of the big city's busiest spots October 8 when over 3,300 members of the Independent telephone industry registered for U.S.I.T.A.'s 64th annual convention.

If you attended U.S.I.T.A.'s 64th annual convention, you will remember these familiar scenes — (1) the crowds waiting for elevators to whisk them up to the busy rooms on the upper floors; (2) the hotel's busy house phones; and (3) the lobby that served as a convenient meeting place, and a spot for convention activities.

One of the lead-off features of the recent U.S.I.T.A. convention was the annual meeting of the presidents and secretaries of the state telephone associations. The photos shown below were taken during the meeting by TE&M's camera.

The TE&M camera took the above photos during U.S.I.T.A.'s dinner for the presidents and secretaries of the state telephone associations.

U.S.I.T.A.'s dinner for the executives of the state telephone associations.

# The Changing Facade of Communications

**The future of the communication industry holds wonders that will surpass those which have already entered the pattern of existence. While men and new ideas are constantly appearing, the telephone group shows a continuity of purpose, which is bound to be influential in coming years, just as it has in the past.**

By CLIFFORD C. PEARCE

**President, U. S. Independent Telephone Association**

■ WHILE new men and new ideas are constantly appearing in the communication equation, I am proud and pleased to note that the telephone group as a whole shows a *continuity of purpose, a determination to carry on certain traditions*, which are bound to be influential in coming years, just as they have been influential in the past.

I would like to pause for just a moment to reflect upon the instrument that really brings us together — this miracle, this boon to civilization that we call the telephone.

Someone has said that since the curtain went up on human history no single thing has exerted a more far-reaching influence on the life of the average person than has the telephone. Eighty-five years have come and gone since Alexander Graham Bell invented what was then regarded as a scientific toy but what has since become an indispensable tool in our daily life. During these 85 years our country has changed and so has the telephone.

Today, the telephone is the *lifeline*, the *heart*, and the *voice* of busy, every-day America. It puts the unity in national defense. It dwindles distance. It is friendliness and security. It is so deeply interwoven in the warp and woof of America that if any of our countrymen were asked to name our greatest invention, they might overlook the telephone. It is like the air we breathe — taken for granted — and almost as essential to our well-being.

The romance of the long distance call, abridging space, may remind us of its wonders, but its everyday, routine use has made the telephone as accepted — and as commonplace — in its benefits as water running through a faucet.

It links cities and continents. But it is through being so deeply imbedded in everyone's daily habits that the telephone has become an unconscious reflex action in our way of life.

No one gives it a second thought as he summons the doctor or police; as highschoolers relive their wondrous days in long, long reminiscing; as the doctor clarifies his handwriting on a prescription for a druggist; as reporters call in on their vigilant rounds; and as shopkeepers order their goods.

Seldom do we stop to think of the daily miracle of voices transmitted by wire — or air — as we talk to each other remotely, the entire voices of a city intertwined in commerce, friendship, and all human exchange by this now prosaic part of living.

**"A Significant Year"**

THOSE of you who listen to the Garry Moore show on TV and radio are familiar with his reference to things past as "That Wonderful Year." Certainly this has been a wonderful year for the communications business and 1961 will go down in the record books as one of the most significant in our history.

Many things happened in 1961. Foremost among them, I think, was our increased awareness of the fact that at long last we are face-to-face with direct competition, and some mighty stiff competition at that. In fact, many of our leaders believe the greatest challenge facing the telephone business today is to accelerate the improvement and expansion of an integrated communications service, both locally and nationally, in order to meet increasing outside competition.

Men prominent in both branches of the industry are viewing the situation with alarm. All telephone companies must constantly plan for more modern equipment and techniques and we must acquire a broader concept of communications service.

We must realize that our very existence depends on providing total communications service. Conversion to dial no longer is the ultimate.

We are well equipped to meet the challenge of this new communications era. With WATS, Telpak, DataPhone, and DEFT (Dynamic Error Free Transmission), the revolutionary new technique for high speed transmission, supplementing the solid foundation of our existing offerings, we have what the customer needs and wants. Success is certain if we do our marketing job as efficiently as we have run the operating side of our business in the past.

However, we telephone people must be determined to avoid the trap of regarding our competitors too lightly. Industrial smugness has put too many businesses in the red. If you had told the railroad tycoons 60 years ago that in 30 years they would be flat on their backs, broke, and pleading for government subsidies, they would have thought you totally demented.

Such a future was simply not considered possible. It was not even a discussable subject. The very thought was insane. Yet a lot of insane notions now have matter-of-fact acceptance — for example: the idea of 100 ton tubes of metal moving smoothly through the air 30,000 feet above the earth, traveling 600 miles an hour loaded with 100 sane and solid citizens casually drinking martinis sounds fantastic but it has dealt cruel blows to the railroads.

The man who *once* worked on a Packard assembly line — the man who *once* read proof for *Collier's* magazine . . . the man who *once* operated lighting for Republic Pictures . . . these men know something of the force called competition. But the knowledge came too late.

Fortunately, there is a bright side to our picture. We should take our cue from Chairman F. R. Kappel of the AT&T who says: "*So far as the Bell System is concerned, we intend to give this country such a quality and quantity of communications that business and government and everyone all over this land will find it impossible not to use them to ever-increasing advantage. You are going to find that the means for communicating all forms of intelligence — words, pictures, documents, data of all kinds, everything — will surpass anything you have ever dreamed of. This won't happen in five minutes, but we shall work at it and work at it and work at it and work at it and we will bring it about.*"

**New Services and Products**

TO MEET the present and future requirements of our customers the industry has available, or will have, a whole new array of services and products. Unless you have seen the Bell System's experimental electronic central office in operation at Morris, Illinois, you ain't — if I may use the vernacular — you ain't seen nuthin' yet.

Actually, Morris' subscribers are getting a telephone service of the future. This newest marvel of communications magic is all-electronic. Calls are switched in *millionths* of a second instead of thousandths as at present. Moving or wearing parts are largely eliminated. The system can diagnose its own troubles, and it provides an unbelievable variety of new and additional services for subscribers.

Certainly the service improvements and service expansions of the past and present can never be halted as long as the telephone industry builds for the future. Today there is no saturation point in sight. The public appetite for communication service grows with every extension and improvement of that service.

**The Independents**

ACCORDING to the record, in 1922 there were 9,200 Independent telephone companies. In 1954 USITA ran an ad in *Time* magazine which stated, among other things, that there were 5,200 Independent telephone

companies serving America.

At the close of 1960 approximately 3,300 companies were in existence, and 9,497,140 stations or over 82 per cent of all Independent stations were owned by 423 of these companies, leaving slightly over one million telephones to be served by over 2,800 companies for an average of about 400 stations each.

By the end of the current year the total number of Independent companies will be less than 3,000. Just how soon we will drop in number to 2,000, to 1,000, and to 500, no one knows. But as sure as death and taxes the day is fast approaching.

This is a day of specialists, mass production, government reports, borrowed capital and a public that doesn't want a product that is second best.

Perhaps consolidation, mergers and acquisitions are the answer, and as we say in Iowa, "the day of the 80-acre family farm is gone, whether we like it or not."

**"A Quality Product"**

DURING my travels I was in constant touch with my home and office by telephone — whether in Tampa, Las Vegas, Honolulu, Anchorage, Willow Creek or Little Fork I merely picked up the telephone and gave my business or residence number plus the area code. In practically every instance the call was completed in a matter of 30 seconds or less, and in every instance the transmission was nearly perfect.

This is the real proof that a quality product was made possible by the cooperation of all segments of a great industry. Herein lie the two most important ingredients for the continued success of this industry — cooperation and quality. Every telephone company must cooperate to aid in marketing new services and work to improve the service they now provide.

We must work together to meet the desire of every present and future customer by providing him with a product of the finest quality and with a communication service to meet every possible need. Our answer to all present and future competition is — cooperation and quality.

I often hesitate to quote figures in any address. However, if I may beg your patience, I shall speak of the nearly 12 million telephones operated by the Independent telephone industry and the fact that this is double the number we served just 10 years ago.

While we still consider ourselves small compared to the great Bell System, we Independents are the second largest telephone operation in the world. That's right. Our combined Independent operation exceeds the number of telephones in the United Kingdom, in France, in Germany, or any other country in the world. It is more than three times the number in all South America. While the Russians may boast of their adventures in space, we Independents operate two telephones for each one in Russia. We are a dynamic growing industry operating in a great nation.

This growth of today, and the growth of the future, lends a deep public significance to the character of the

*Please turn to page 88*

**Members of this U.S.I.T.A. convention group are (l to r): FRANK BARNES, and FRANK BARNES, JR., Rock Hill, S. C.; JOHN G. REYNOLDS, Chicago; and BILL CORMAN, Atmore, Ala.**

**SUHARJO SURJOATMODJO (left), Djakarta, Indonesia, and R. MOERHADI (right), Bandung, Indonesia, meet U.S.I.T.A. convention speaker "Smokey" Batzer.**

**T. A. DANIELSON (left) Warsaw, Ind., and GEORGE A. STEELE, president of the United Telephone Co., Inc., Warsaw, Indiana, visit with ROY SMITH, TE&M's publisher during the U.S.I.T.A. convention.**

**Visitors at the U.S.I.T.A. convention (l to r): TENG CHIN of the Taiwan Telecommunications Administration, Taipei, Taiwan, China; and HIEN CHEE FANG, Washington, D. C.; JEN KUEN CHEN, and TUNG CHANG, all of Taiwan Telecommunications Administration. Group's attendance at the U.S.I.T.A. convention and visit to the U.S.A. was arranged by the International Cooperation Administration.**

# Your Investment In Regulation

By PETER E. MITCHELL
Commissioner,
Public Utilities Commission,
California.

The Honorable PETER E. MITCHELL

**As sure as the night will be dark, telephone companies of the future will be bigger, will have more difficult technical requirements, more intense competition, and a more complex operation.**

■ As a preliminary ground rule, I'll state any ideas or opinions I give are my own and don't necessarily express or reflect the opinion of the California Public Utilities Commission. We California commissioners prelude our public address with this comment to indicate to our auditors just how far the four other commissioners trust the one speaking!

Although speaking to you here in Chicago removes me far enough from California to be considered an expert, I assure you I am not. But prior to going to work for the state of California 13 years ago, for 21 years I owned and operated a small business in my native city of Sacramento.

I understand the profit system and, what is more important, have a real appreciation for the few dollars left in the till after paying expenses and taxes. As a commissioner charged with the duty of regulating public utilities, it is my premise that common sense based on the law and experience is superior and preferable to the theories elaborated on in libraries.

Each day en route to my office I cross over the Golden Gate Bridge, a magnificent structure spanning that body of water where the calm, blue Pacific Ocean blends with beautiful San Francisco Bay. This highway in the sky literally dangles, supported by thousands of wires suspended from two huge cables. Much of the traffic rolling along this man-made marvel accepts unthinkingly this convenience and shows little or no appreciation for the know-how or dollars required to plan, promote, construct, develop, and operate it.

Lacking those wires and cables, there would be no bridge connecting gleaming, air-conditioned San Francisco and marvelous Marin County. Without them, the easy flow of commercial life between these centers of population would add up to almost nil.

By flicking my imaginary brain switch, I have no trouble in mentally establishing a relation of likeness between the great suspension bridge and the interlacing network of wires and cables here in the United States which make possible the finest communication system in the world.

Although we'll soon be bouncing messages off the moon, it is the old commonplace wire and cable method of transmission that keeps the cash register ringing for our many Independent telephone companies. So, rather than charge into the Jules Verne era or the satellite age, I'll try to keep both feet on the ground and discuss humdrum matters essential to successfully operating the telephone business — under regulation.

## "A Privileged Position"

UNDER REGULATION are two big, meaningful words to those engaged in management of telephone properties. The responsibility to serve the public without discrimination and at fixed rates are the features which distinguish your *public utility* business

from what is generally referred to as *private* business.

History won't let us forget that it was against a background of excessive and discriminatory rates and poor service that this regulatory method, designed to correct and prevent these abuses, was brought into being. A public utility isn't in the same category, factually or legally, as unregulated business.

A public utility exercises an extraordinary privilege granted to it by the state, and it occupies a privileged position. It is charged with administering a public trust. Commissioners charged with the duty of regulating public utilities are also charged with a public trust.

Commission regulation represents a development in governmental machinery natural to this country. The early regulation of public utilities was essentially restrictive in character. Both in statutory provisions and commission activity, there was an underlying assumption that only the interests of the consumers required protection. Little or no attention was given to the claims of investors or to the long-term ability of the corporation to raise new capital.

Our country is militantly defensive of liberty, of the freedom of contract and the control of one's individual property, strongly devoted to the free play of a competitive market and to acceptance of the survival of the fittest without significant recriminations. As a result, the rationalizing of extreme restrictions on the conduct of certain selected businesses has been an agonizing one covering our history from shortly after the Civil War until the beginning of World War II.

In times of good business and general prosperity, the fetters of regulation are considered by some to be irritating; in times of recession and depression, they are sought as a haven.

Short-circuiting further philosophical dissertation of this governmental function, let's agree that the purposes of regulation are to preserve and promote those services indispensable to large segments of our population, to prevent excessive and discriminatory rates and inferior service, to allow a reasonable opportunity to make a reasonable profit on a reasonable investment.

To accomplish this, there must exist a thorough understanding of the job. Failure to comprehend the realities involved, refusing to cooperate with and indifference to the success of our regulatory system, federal and state, can but lead to nationalization of the industry. Failure of the regulatory system would bring us to the brink of socialism.

### A Common Interest

THE REGULATOR and those who are regulated have much in common where the reputation of regulatory commissions is the issue. The efficiency and integrity of regulatory commissions' operations are basic to the continual economic development of this country under a system of private enterprise.

**USITA convention papers not presented in this issue will appear in the November issues of TE&M. Also, the regular feature departments will be back in their usual places in the November issues.**

Promoting efficiency and preserving the integrity of our regulatory system are real and important reasons why the members of U.S.I.T.A. must maintain a constant appraisal of the standards and procedures of all regulatory commissions.

It's your duty to encourage and show energetic concern with the efficiency of their operation and with their faithfulness to responsibilities imposed on them.

As one whose decisions are constantly submitted to the court of public opinion, I keep my ear to the ground and tuned to reactions. It's my opinion that the people of our country are fairly well satisfied with the way the investor-owned public utility industry operates under existing state and federal regulatory laws.

This observation isn't intended as a tranquilizer. The situation may well be in hand but, alert aggressive management needs constant vigilance. Good public relations is thorough understanding by the public of your function and problems.

### Greater Challenges Ahead

AS SURE as the night will be dark, telephone companies of the future will be bigger, will have more difficult technical requirements, more intense competition, a more complex over-all operation, and the job of tomorrow's managers will be vastly more difficult.

Telephone companies will be confronted with problems involving all legislative and regulatory bodies and financial institutions in new and unique situations, only resolved by patience, intelligence, and ingenuity.

These problems of management will bring about greater challenges than those generated in the engineering and technical fields.

To successfully meet the challenges of growth and management, you must be making a profit. Adequate profits are the key to continued growth and development of a public utility.

Again, in return for making a profit, the public utility company has the ever-present obligation of improving steadily its products and services and to provide them at the lowest possible cost to the customer.

There's nothing suspect about making a profit. It's the best indication of a healthy business. Publicizing the fact that a public utility company has had a

*Please turn to page 119*

**From speaker's rostrum USITA President CLIFFORD C. PEARCE opens first General Session of 1961 USITA Convention in Chicago's Conrad Hilton Hotel. Other USITA officials wait turn to conduct convention business. (l. to r.), FRANK G. La PRADE, CLYDE S. BAILEY, and (far right) HAROLD BOLLINGER.**

# Pricing For Profit

By R. D. KINGSTON
**GT&E Service Corp.,**
**New York City.**

**How much profit should a company receive from the supplemental services it provides?**

DURING our Commercial Committee meeting last April I was asked to discuss tariffs at this year's annual USITA Convention. This is a broad field, and I spent considerable time with various people in the industry discussing problem areas insofar as tariffs are concerned.

Almost without exception the discussions would center around the vast number of supplemental items of equipment and service being introduced into the industry and whether or not they were profitable. I don't profess to have the answers to this question for any individual company, but it might be helpful to discuss some areas to be considered in pricing these services. (By supplemental services I am referring to all services other than basic exchange service.)

Some companies apply their average annual charges to all items of equipment and service. If it were true that the actual costs were the same for all services, our task would be simple. But what happens to our profit picture if such is not the case?

The answer is also simple: If we're diluting our earnings by underpricing supplemental equipment, these extra services will be subsidized by our basic exchange rates. And it's good business to hold the level of basic exchange rates whenever possible, consistent with adequate profits and good service.

Now let's analyze the components making up our annual charges and how they may differ for different service offerings.

A relatively few years ago obsolescence, although applicable to some extent, was not of too great concern to the communication industry. Switchboards were engineered for a life expectancy of 25 years, and they would remain in service at least that long and in many cases longer.

Because of changing customer requirements, a number of recent changes have been made in switchboards, and these changes will undoubtedly continue. The telephone instrument consisted of a base with a handset and a dial all in one color — black. Today there are many types of instruments in a number of colors, some with lights, some with gongs and some without bells. By our own advertising we urge the housewife to change the color of her telephone instruments when she changes the color of her walls.

We are told that in the not too distant future the

telephone will consist of transmitters and microphones located in the wall in each room of the home. Instruments are now being built for a combination of uses, as an ordinary telephone, as a household intercom, and as a means to answer the front door from any room in the home.

We are on the verge of a tremendous evolution in data transmission. Although we have provided certain data transmission facilities in the past, there is no question but that there will be radical changes in the facilities provided by the telephone companies for this service during the immediate future and for some time to come. However, we're not concerned here with the number of changes but rather how to handle them in our pricing structure.

**Separate Depreciation Factors**

IN PRICING supplemental services, we might consider applying separate depreciation factors to two different items — reusable equipment and nonrecoverable costs. (Consider reusable equipment to be that part of the equipment which can be used for a subsequent installation, and nonrecoverable costs as those costs associated with the actual installation such as labor, overhead, cost of removal and rehabilitation.)

Assume a company has decided it will provide data subsets as a part of its regular service offering. Also assume these subsets will cost $300 each and that the Engineering Department has estimated it will cost $60 to install each subset. An engineering evaluation shows that the subset should last 15 years. But we have read in the trade journals and newspapers that the subset will be obsolete in 12 years. On which basis shall we amortize the reusable investment

We would be kidding ourselves if we didn't use the 12 years, since that is the estimated time we will have to recover our investment. Now what happens to the $60 it cost us to install the subset? According to our accounting procedures, it will be capitalized and become a part of investment, at least for the original installation. If we assume the subset will remain in one location during its entire 12-year life, we would amortize the installation costs over 12 years or at a rate of $5 per year and be fully compensated.

However, because of changing customer requirements it is unlikely that each subset will remain in one location for the full 12 years. It is more likely that each subset will be located in two, three, four or possibly more locations during its life.

If the subset is installed in three different locations during its 12-year life, it would follow that the installation costs are actually $180. It appears reasonable that we must recover the $60 for each installation during the time it remains in one location or an average of each four years at the rate of $15 per year.

This discussion has assumed that installation charges have not been applied. Installation charges would tend to reduce the disparity unless the charge to the cus-

*Please turn to page 114*

**Members of this U.S.I.T.A. convention group are (l to r): T. F. LYSAUGHT, A. K. NJAASTAD, E. J. GLENNER, and M. H. ESPERSETH, all from Northlake, Ill.**

**RALPH C. MASON (left), of GSA, Chicago, and J. A. CHEESEMAN (center) of GSA Washington, D. C., meet with J. D. PALMER, Chicago, during the U.S.I.T.A. convention.**

**DON SORENSEN, TE&M's adv. mgr. (left) meets with BILL WILSON (center), and C. TODD, Mansfield, Ohio, during the recent U.S.I.T.A. convention.**

# The Traffic Department's Part In Public Relations

By MISS BETTY WYMAN
**General Telephone Co. of Florida, St. Petersburg, Fla.**

**"The Traffic Department is the most talked about and most often contacted department of all. Long distance operators represent a telephone company to the public more times during any 24 hours than anyone. Yet they are never seen . . ."**

TELEPHONE people aren't distracted by the title Communications Service Advisor. In fact, we find our customers also like it. One large user told me the title PBX Representative (our former title) reminded him the telephone company representative was there looking over his firm's equipment, but Communications Service Advisor gave him the happy feeling he once had as a stranded motorist. When he saw the AAA truck coming down the street he knew expert help and advice were available. At this point we've made our most important gain — his confidence and trust in us.

The Traffic Department's part in public relations is vital — more vital than in any other department of the telephone company. To support this, let's take a look at ourselves. We have plant, commercial, and traffic departments which together broadly cover our many operations.

**Commercial** employes see and talk to their customers as they come in to make new applications, regrade or move their telephones. Those who have leisure time generally enjoy driving or walking to the local telephone building and paying their bills in person. Often they wish their toll or regular bill explained and face-to-face we have the opportunity to explain, convince and keep our public relations at a high level, which is fairly easy on this basis. Of course, many contacts are also over the telephone.

**Plant Department** installers and repairmen also meet the public but I'm sure are not questioned in their work nearly as much as commercial or traffic workers, and many times they need not even enter the customer's premises to complete their work.

**Traffic Department** — composed of long distance and communications service advisors — is without doubt the most talked about and most often contacted department of all. Here we have two extreme types of public relations.

Long distance operators represent a telephone company to the public more times during any 24 hours than anyone — yet are never seen. Their voices alone must reflect the company's *best* public relations.

The communications service advisors, dealing with PBX customers who in general pay the highest bills of any subscriber, must go to *his* place of business — on the customer's own grounds. And those of us who have served the public from both our office and theirs know there is a difference.

Public relations techniques take on a different at-

mosphere at the two places, and the interview at either place must be well-planned and be quickly adaptable to changing conditions.

To indicate just how important to us are our PBX customers, our Bell System friends recently made a study. It tells that, while these customers are only a small percentage (about one-half of one per cent) of total accounts, they represent 15 per cent of total telephones. And more than 25 per cent of all local switched messages and more than 50 per cent of Bell System long distance messages originate or terminate at PBX switchboards. While these volumes may vary either way in your particular area, we imagine they are well representative of the whole industry.

It's only good business to prepare ourselves to cultivate and better serve this all-important customer of ours. Your communications service advisor can play a large role. In her capacity she is a built-in diplomat, apologist, public and human relations representative, salesman, counselor, trouble-shooter, and recommender.

She also may run a PBX operator employment clearing house and can usually find time to lend a sympathetic ear to the problems of PBX operators on the job but ofttimes at home.

Selection of a person possessing these qualities (she is probably already in your organization) can go a long way toward solving many of your large business customer problems.

Duties of a CSA (communications service advisor) are wide and varied and can probably be divided into four general classes: (1) Ability to be a diplomat; (2) having methods and technical knowledge of all departments; (3) thorough understanding of public relations; and (4) ability to plan, coordinate and integrate all daily emergency calls into your set routine.

Look over a normal week:

**Monday** — the cutover date for a new PABX at the City National Bank. I had visited the firm a week before with the marketing and sales counselor. He introduced me to the bank president, and we discussed plans for a meeting of the bank personnel after closing hours to explain and show how they would operate from their stations. We also presented our blue booklet to the bank

This booklet is made up especially for this firm. On the attractive cover is the firm's name and address and the type of PBX equipment to be installed. The first article is titled "*PBX's Most Important Person — the Girl at the Board.*" This aricle, written by G. R. Brackett, appeared in *Telephony*, October, 1954. Although many fine pieces have been written along the same line and by Mr. Brackett, I haven't seen a more thorough or convincing one.

Next is a sheet titled, "*Be a Telephone Diplomat,*" written by Allan R. Stacey for *Telephone Engineer and*

***Please turn to page 112***

**The team of MISS JUDEE CARR (left), Chicago, and MISS SANDY LIPMIN, Chicago, made a real hit with U.S.I.T.A. conventioneers.**

**Mr. and Mrs. Howard B. Fine of Rison, Ark., visit the TE&M exhibit room in the Conrad Hilton during USITA convention.**

**MARY LAPORTA (left), Chicago, Ill., and DOROTHY TYK, Brookfield, Ill., were photographed by TE&M's camera during U.S.I.T.A. convention.**

**Members of this Chicago group of U.S.I.T.A conventioneers are (l to r): J. A. GUINESS, O. DIETRICH, and J. SOSS.**

# CDO PLANT MAINTENANCE

By JAMES M. KIRBY
Chief Engineer,
Oregon-Washington Tel. Co.,
Hood River, Ore.

**To provide the best possible service a planned preventive maintenance program is a "must." The program suggested by this article will help you improve service and reduce costs.**

THE OBJECTIVE in the operation of a CDO plant is the same as that in the operation of any plant — to provide the best possible service at the least possible cost to the subscriber and to earn a fair return on the investment.

CDO stands for Community Dial Office. The main qualification of a CDO plant is the traffic operation (the operator) is located in a different town. Usually there is no commercial office, although this is not always the case.

Operation of a CDO exchange is difficult because it usually is remotely located in relationship to the main office.

Most of my experience has been with small companies, so my observations and suggestions are directed towards the small operation. I believe that in most cases they will also apply to the larger company.

### Preventive Maintenance

TO GIVE the best possible service in the CDO we must practice preventive maintenance inside and out. Although this isn't new to some of you, many telephone companies have no planned preventive maintenance program.

If you discuss automotive maintenance with these people, 99 per cent will tell you they are careful about having their automobiles lubricated, oil changed and tires crisscrossed. If they understand the importance

MRS. MAYME WORKMAN, Springfield, Ill., retiring executive secretary of the Independent Telephone Pioneer Association was honored by the organization at its recent annual meeting in Chicago.

MRS. MAYME WORKMAN (left) retiring executive secretary of the Independent Telephone Pioneer Association, greets her successor, MISS SOPHIA K. DAVIS, Springfield, Ill.

Among the visitors to TE&M's exhibit room at the U.S.I.T.A convention were (right): MISS KATHARINE BAUER, Jefferson City, Missouri, and Mrs. M. E. CHAPMAN, Galesburg, Ill.

***Extra revenue mobile service costs you less with Motorola on the job!***

**Call or write for full system facts... and let us show you how Motorola's self-help promotion program will help you gain subscribers for your profitable telephone-in-the-car service, simply and easily.**

Two-way radio is the heart of your telephone-in-the-car service, and with Motorola, you are assured of the greatest dollar return on this extra-profit subscriber service. Here's why: Motorola equipment is engineered to telephone standards by the industry leader in 2-way radio. Motorola base station radio works into your exchange simply, automatically—no operator is required. ■ In the car, Motorola makes "dialing" simple, too. The compact pushbutton "dial" unit has inside lighted pushbuttons for quick, sure operation... the handset is mounted right on the front... the unit can be placed conveniently to the right or left of the driver. Only Motorola provides 2-way radio with completely transistorized receiver and power supply. This is the radio that sets top performance standards... provides lowest operating costs in heavy duty services, including: police, construction, power utility, petroleum and transportation. And full Motorola radio contract maintenance is available, ready to keep your radiotelephone profitably geared to the high service level that you provide for your land subscriber.

**MOTOROLA PUSHBUTTON RADIOTELEPHONE**

Motorola Communications & Electronics, Inc., 4501 Augusta Blvd., Chicago 51, Ill., A Subsidiary of Motorola Inc.

of preventive maintenance to their motor vehicles, they should easily be sold on the value of preventive maintenance in their telephone plant.

Preventive maintenance, which I shall refer to as P.M., means specific functions are performed periodically. The length of the period will be dependent upon the function to be performed. For instance, monthly we routine the batteries and give them an equalizing charge. On the other hand, annually we lubricate switches.

On the subject of switching equipment, I believe our manufacturers are somewhat guilty of underselling P.M. Manufacturers whose equipment doesn't require lubricating have used this as a sales pitch. And those manufacturers whose equipment requires periodic lubricating have a tendency to say as little as possible about P.M. to keep their sales up.

It is not my intention to criticize them, as I would probably do the same thing. But all dial systems require some form of P.M. to give top-grade service.

During the past 20 years I've had the experience of maintaining nearly all makes and types of switching gear-steppers, crossbar and relay. Every type has its maintenance problems. These should be checked periodically to make sure they won't cause a future breakdown.

The first step towards getting a P.M. program going is to set up some sort of a check list. Here you outline what work is to be performed at the end of each period. I have prepared a simple check list (*See Figure One*). This list covers six monthly periods. The type of check list you use is not important — the important thing is to have a definite program outlined and to faithfully follow it.

### Routine Maintenance of Central Office Equipment

NOW THAT we've discussed the need for preventive maintenance, let's consider a few items we'll want to put on our dial equipment routine check list.

**USITA convention papers not published in this issue of TE&M will appear in the November issues.**

One of the most important items is that of keeping the office neat and clean. I have frequently told young technicians that realizing the importance of keeping the office clean, and doing so, is just as important as having a good technical knowledge. I firmly believe this is true regardless of the make or type of dial equipment.

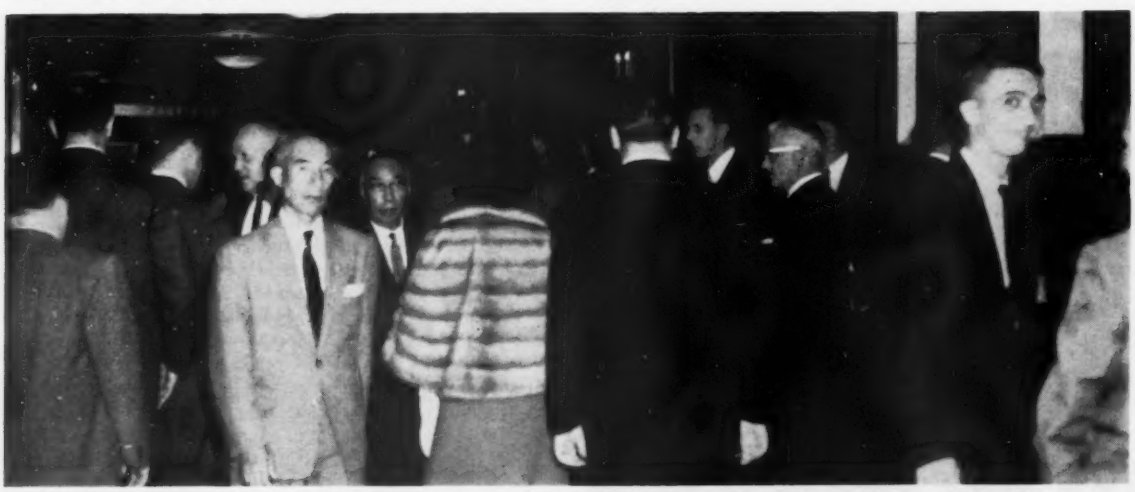
The first item on our check list, in big red letters, is: *See That The Building and Equipment Are Free From Dust and Dirt.* The method used in getting the dust out of the equipment depends on the type of dial unit.

Other items I feel we frequently overlook are: Read all traffic meters; check fire extinguishers; start and check the stand-by light plant according to the manufacturer's recommendations; check all wiring and soldering, especially the distributing frame; check the ringing interrupter and tone equipment; routing of the dial equipment depends on the type of dial unit used. Most manufacturers have manuals dealing with maintenance and routing of their equipment, and their instructions should be closely followed.

Many of us now have nationwide Direct Distance Dialing. DDD demands that we be more precise in the adjustment of our dial equipment. To help with this, I urge the use of these test instruments: The current flow test set, for the adjustment of relays; the pulse generator and measuring set; the brush high speed pen recorder.

Although use of these instruments is beyond the scope of this paper, I'd like to mention the use of the pen recorder. Most of you are familiar with some type of pen recorder. The most common ones are used as recording voltmeters and barometers. The one I'm discussing is a high-speed two-channel (two-pen) recorder.

***Please turn to page 104***



**More than 3,300 guests and members of USITA attended the 1961 convention. Here, during break between the two general sessions and six technical conferences, groups of conventioneers stretch their legs en route through halls of Chicago's Conrad Hilton Hotel to other convention sessions.**

# Mutual LP-Gas Furnaces and Torches

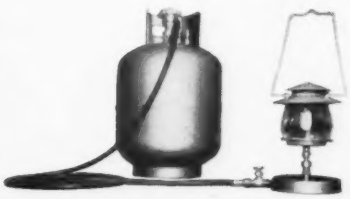
## NEW from Mutual

### LP-GAS LANTERN fits any cylinder!

The new Mutual LP-Gas lanturn provides a brilliant, white light instantly. Telephone men will find it ideal as a regular source of illumination or for emergency service.

This easy-to-attach lantern mounts on top Mutual's B-91 Hand Torch and on No. 6, 11 or 21 cylinders. Through use of special adapter it will attach directly to standard P.O.L. connection. Comes with plain or frosted glass.

On portable B-91



Fits standard P.O.L. adapter • Use on base with any size cylinder

## Provide Speed. Ease of Operation for Telephone Linemen and Cable Splicers

**A complete line of LP-Gas equipment has been designed by Mutual for the Telephone Trade. Each piece has been field tested and proven through years of use by telephone men. All of the major heating requirements of cable splicers and linemen can be done faster, easier and safer with Mutual LP-Gas equipment. Many telephone companies have made Mutual LP-Gas furnaces, torches and heaters a standard part of their operating equipment.**

### CABLE SPLICERS KIT

**A. 491 Tip** — provides intense, broad flame.
**B. 491-B Tip** — Small pointed flame, ideal for close work.
**C.** Pyramid type soldering iron tip. (Soldering iron tips adapt to 491-B Tip.)
**D.** Chisel type soldering iron tip.
**E.** Six-foot Auxiliary Hose Assembly 91-H.

This one-man Kit provides light, compact unit for wiping lead joints and repairing ring cuts. B-91 is refillable cylinder (.91 lbs. fuel) which is ideal for high line work. Torch-tip assemblies are attached to cylinder by six-foot hose.

### TORCHES

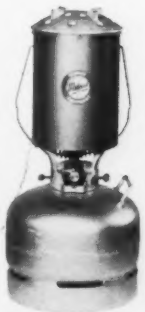
No. 4 Torch

No. 4A Torch

Mutual LP-Gas Hand Torches are used by cable splicers for wiping joints, removing lead from sleeves, repairing terminals or wherever concentrated heat is needed. The same fuel source used for melting furnace or heater can be utilized.

No. 4 Torch — provides broad flame where heavy concentrated heat is needed.

No. 4A Torch — provides small pointed flame which is excellent for close work or small objects.



No. 2 Heater

### HEATERS

This LP-Gas Heater is a convenient, light-weight, portable unit which provides heat for telephone crews. It can be used as cylinder mounted (No. 2) or base mounted unit (No. 2A). Heater can be used safely in aerial tent. Hose extends from heater to cylinder on ground. No regulator necessary. Develops 37,800 Btu.

No. 2 Furnace

### FURNACES

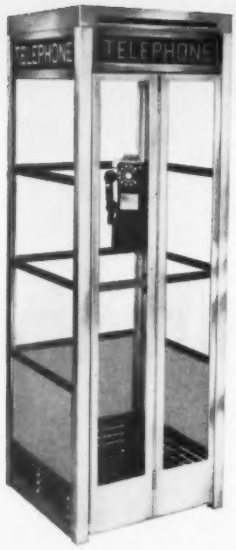
Mutual's furnace is used on a cylinder or base. Cylinder mounted unit (No. 2) is popular for field work. Base mounted furnace (No. 2A) is useful when both melting furnace and heater are attached to cylinder at same time. No pumping or priming. Lights instantly. Works off tank pressure. No regulator is required.

WRITE FOR NEW CATALOG TODAY!

PROPANE Mutual EQUIPMENT

**MUTUAL LIQUID GAS EQUIPMENT CO., INC.**
17129 South Broadway, Gardena, California

in a space only twice* this wide—get more




# revenue with an Alcoa "Compact" Booth!

*Where space is costly,* you can still attract and serve revenue-bearing customers profitably with Alcoa® Aluminum "Compact" Indoor Booths. Only 28¾ in. square, this sturdy booth takes *26 per cent less floor space* than the larger outdoor model! And flush roof design lets you fit booths closer in tandem where traffic calls for multiple installations.

In harmony with any modern décor, clean-line styling of Alcoa "Compact" Booths attracts customers. Sturdy construction features heat-treated Alcoa Aluminum Extrusions . . . cuts maintenance, virtually eliminates damage from vandalism. Alumilite† finish stays bright and clean with only occasional soap and water washing.

Call your telephone jobber for more information. Or write: Aluminum Company of America, 1781-X Alcoa Building, Pittsburgh 19, Pa.

*28¾ in. square!
†Trade Name of Aluminum Company of America

ALCOA ALUMINUM
ALUMINUM COMPANY OF AMERICA

# Buried Cable Construction

By GUY L. CHILBERG

**Outside Plant Engineer,
American Tel. & Tel. Co.,
New York, N.Y.**

BURIED CABLE construction holds as much, if not more, promise for reducing capital expenditures and maintenance expenses — as well as improving service in the outside plant — than any other single possibility.

Because of the range of the subject, I'll restrict my comments to buried plant as it exists in urban situations, rather than include rural. There are many materials, tools and techniques common to urban and rural buried plant. There are probably as many dissimilarities as there are similarities, and it would be impracticable to do justice to both applications in the space available.

I can recall underground urban installations of 30 or more years ago. I use the word *underground* rather than *buried* in referring to these older jobs. Therein lies the difference.

The jobs I refer to were placed entirely in conduit and were economically unfeasible except as luxury, custom installations. Today's type of buried urban distribution is a far cry from those former costly underground jobs. I refer to systems that, at least under favorable conditions, have a lower first cost than conventional aerial plant.

The Bell System and some of its operating companies started down the road of economical buried urban distribution about five years ago. In that period we think we've learned quite a bit. But the more we learn, the more we realize there is to learn in this relatively new field.

In contrast, telephone companies across America have been building aerial plant for more than three-

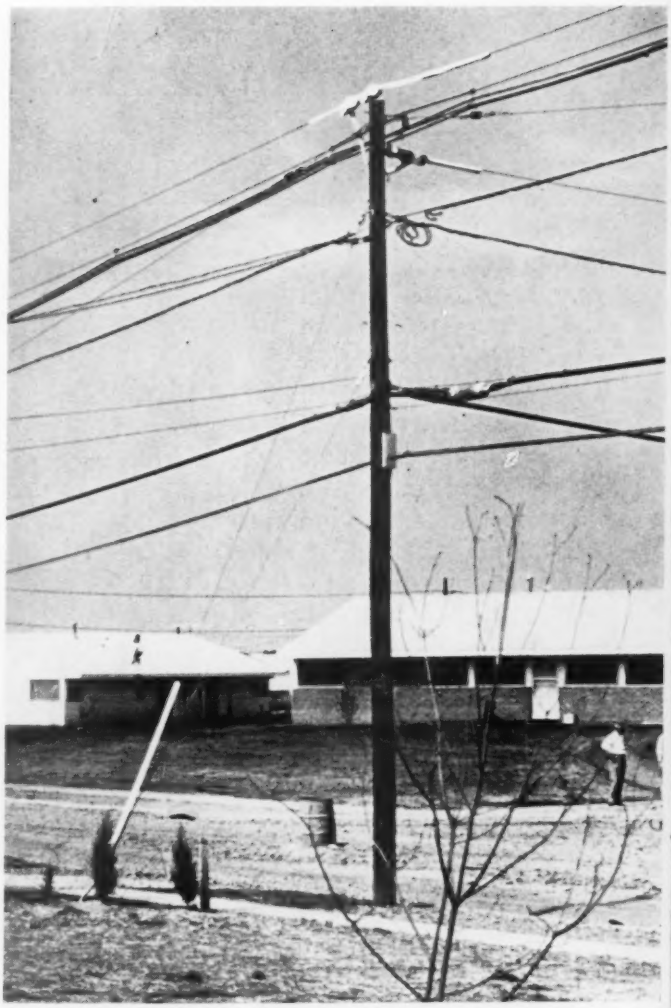


**FIGURE ONE: — The impact of poles on residential areas has become even more pertinent with the introduction of low, ranch house structures.**

*"Buried urban construction introduces some problems today,*

# And Maintenance Problems

**FIGURE TWO: — Public reaction to utility poles in residential sections is shown by measures aimed at abolishing or restricting overhead plant.**

quarters of a century. About 10 years ago most of us were convinced that we had refined to the ultimate the tools, methods and materials involved in aerial distribution plant. In the last five years, we've seen no less than a complete revolution in this field. I mean the availability and use of color-coded PIC cable and the ready-access terminals that facility made possible.

Is it any wonder we say we're just starting to learn about economical buried distribution plant which is really not much more than about five years old?

**Why Buried Plant**

WHY BURIED plant at all? Aerial plant is proved, refined, readily available for maintenance. Our forces are accustomed to its construction and maintenance. Why aren't we satisfied with aerial plant?

There are five principal factors that influence us in looking toward economical buried distribution plant. Not necessarily in order of importance, these are: Appearance, first cost, maintenance cost, service and safety.

In appearance considerations, not even the most dedicated, enthusiastic telephone man is apt to brag about the esthetic impact of utility poles on an otherwise lovely residential area.

This factor has become even more pertinent in recent years with the coming of low, ranch-house type structures combined with the unfortunate habit by most developers of stripping the trees off a plot before building.

The public reaction is shown by the periodic rash of proposed legislative measures at city, county and state level to abolish or restrict all overhead utility plant. These typical views (*Figures One and Two*) illustrate this problem.

As to first cost, consider those situations where conditions are favorable to buried, in contrast to aerial distribution plant. By favorable I mean where there is cooperation between the developer, the telephone company,

*but it has great potentials in capital and expense dollar economy."*

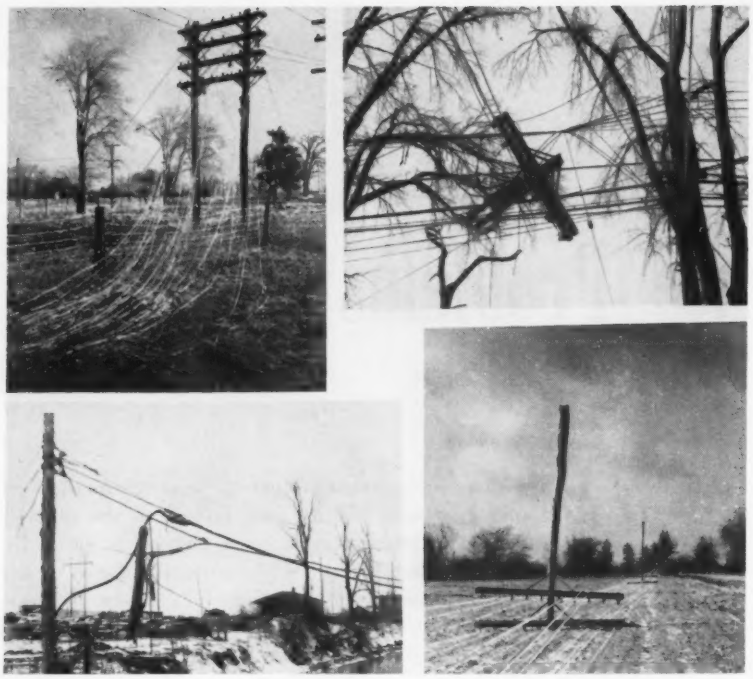


**FIGURE THREE: — The comparison on service is one of the simplest to document in favor of buried plant. Aerial plant failures during storms cost maintenance money, and represented total service failures and long delays.**

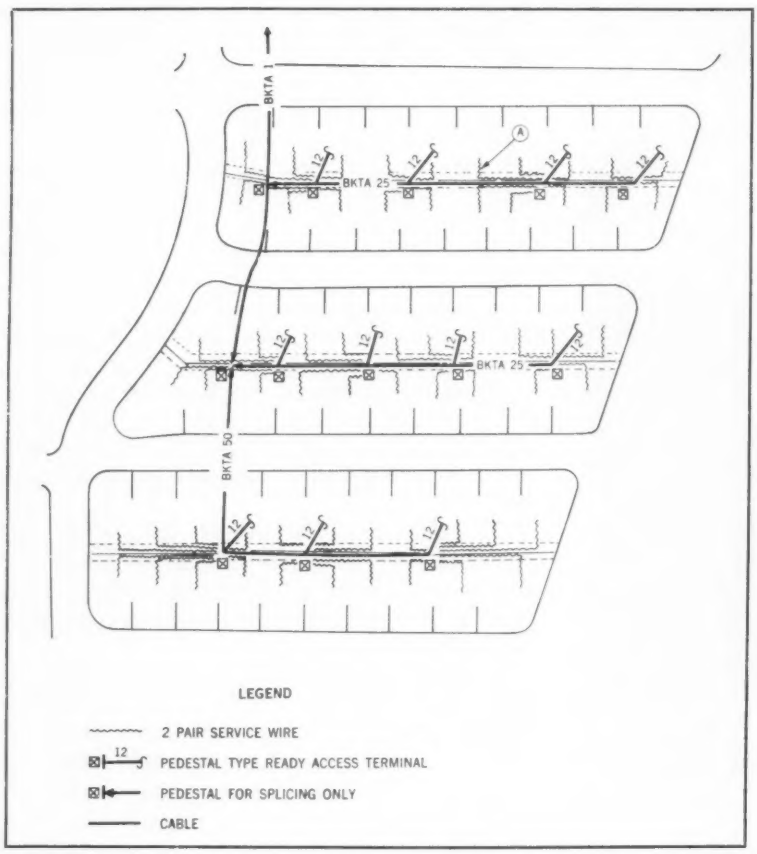



**FIGURE FOUR: — Rear property-line layout shows 10 ft. utility easement extending 5 ft. on each side of the property line.**

and the power company (if power also is going underground); where soil conditions are conducive to easy plowing or trenching; where the developer is building on a systematic, progressive basis on all lots in the area; when it is possible to avoid construction during periods of frozen soil if we are talking about parts of the country with this condition.

Under these conditions, it has been established that buried telephone distribution plant can be constructed at an appreciably lower first cost than aerial plant. This isn't to say it costs more to build buried plant, if all these conditions don't prevail.

Where they do prevail, first-cost economy in favor of buried can definitely be expected. The situation is even more favorable to buried plant, where curving streets would require a large number of anchors and guys for aerial plant.

What about maintenance expense? To begin with, it costs more to correct an average failure in buried plant than it would to correct a corresponding failure in aerial plant. The difference lies in the fact that buried plant is inherently much less exposed to physical damage than is aerial plant. The net result is the annual maintenance cost per unit of buried plant is less than for aerial.

This maintenance cost advantage is even larger in those locations susceptible to sleet, ice, wet snow combined with wind, and tornadoes or hurricanes. When someone overstresses restoration problems in buried plant, I remember aerial restoration problems such as *Figure Three.*

Comparison on service is one of the simplest to document in favor of buried plant. Recall the *Figure Three* showing aerial plant failures during storm conditions. These conditions cost much maintenance money to restore. But they also represented total service failures and long periods of delay. Buried plant just isn't exposed to most of the service hazards that plague aerial plant.

During 1960 the Bell System — excluding our Long Lines Department — suffered 82 per cent more cable trouble per sheath mile on aerial plant than it did on buried

plant. This was in spite of the fact a larger part of our exchange aerial cable is under gas pressure than is our exchange buried cable.

Safety is another factor in buried distribution plant. Two of the principal causes of disabling and fatal accidents are falls with or from poles and electric shock. We don't use poles in buried plant, and exposure to electric shock in buried plant is almost nonexistent. We in telephone management have a moral as well as an economic responsibility to do everything practicable to reduce accident hazards in our plant design to the minimum.

**FIGURE FIVE: — Developer's practice of scraping all the top soil into a small mountain range along the rear property line has made the layout shown in Figure Four worthless.**

## Design Considerations

THERE ARE probably few portions of a telephone exchange plant more systematized and refined from a design viewpoint than aerial distribution. This is not so with buried distribution.

This stems from the fact that economical buried plant is relatively new. But we'll always have a range of design possibilities from which to pick and choose when designing buried distribution, depending on local situations.

So here are a few of the more usual layouts, with the considerations that affect their selection.

The most typical (*Figure Four*) and applicable is the so-called rear property line layout. In it, there is usually a 10-ft. utility easement extending 5 ft. on each side of the property line. Telephone uses the 5 ft. on one side of the property line, and power the 5 ft. on the other side.

Pedestal terminals are mounted on alternate lot corners, so each terminal will serve about four lots. If power also is underground, they mount their transformers on the other alternate lot corners to separate power and telephone distribution points.

This layout is ideally suited to the average development. It's not applicable where lots are deep due to the long service wire runs that would exist there.

In some locations the rear property line layout described is made impossible due to the developer's scraping of all top soil into a small mountain range along the rear property line. *Figure Five* illustrates the situation. This is typical of most of the large developments on Long Island. One solution to this problem is to lay the distribution cable along the rear of the houses, looping it up through a terminal mounted on the side foundation near the rear of each house. This layout (*Figure 6*) is a typical, actual layout in a recent development of this type.

A substantial part of the cost of underground distribution plant accrues from the cost of trenching or plowing, whichever method is used. Large economies can be expected, if the amount of trenching can be reduced.

Michigan Bell Telephone in cooperation with Detroit Edison, and Illinois Bell Telephone in cooperation with Commonwealth Edison took steps a few years ago to reduce the joint cost of trenching. They agreed, where both power and telephone were going underground, to use a common trench to minimize trenching costs.

To meet existing code requirements they provided 12 in. of well-tamped earth for separation between power and telephone circuits. *Figure Seven* shows an actual layout using the joint trench and 12-in.-separation concept.

Vertical separation and clearances can be made by this arrangement (*Figure Eight*), developed by and mutually agreed to by the Michigan Bell and Detroit Edison companies.

This common trench layout pro-

*Please turn to page 74*

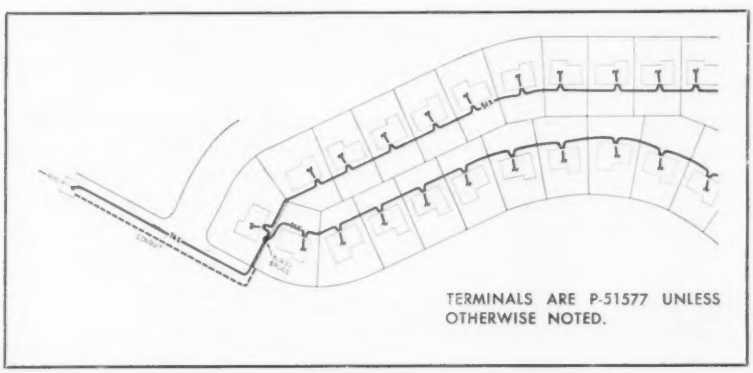



**FIGURE SIX: — House terminal loop method.**

# AE provides business communications for large or small subscribers!

Let's consider two completely different commercial customers in your area. The taxi stand needs a strong, weather-proof telephone. The phone must be accessible only to the cab drivers. You can offer this customer our rugged Outdoor Phone...

Your local golf club, on the other hand, needs a complete communications system to handle incoming, outgoing and internal traffic. For this customer, our 10-A1 Key System is ideal.

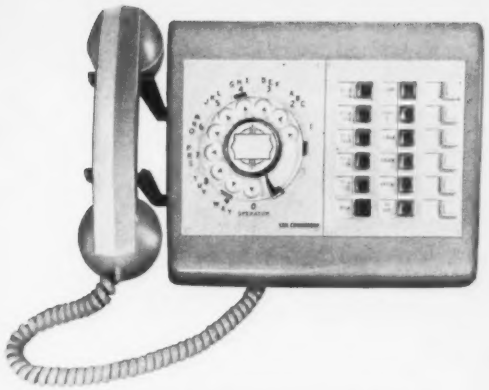
For details on our complete line of business phones, PABX and PBX boards and key systems, see your AE representative. He can also furnish you with valuable sales aids to help you promote business communications equipment. To contact him, write Automatic Electric Sales Corporation, Northlake, Illinois.

**AUTOMATIC ELECTRIC**

Subsidiary of

**GENERAL TELEPHONE & ELECTRONICS**

GENERAL SYSTEM



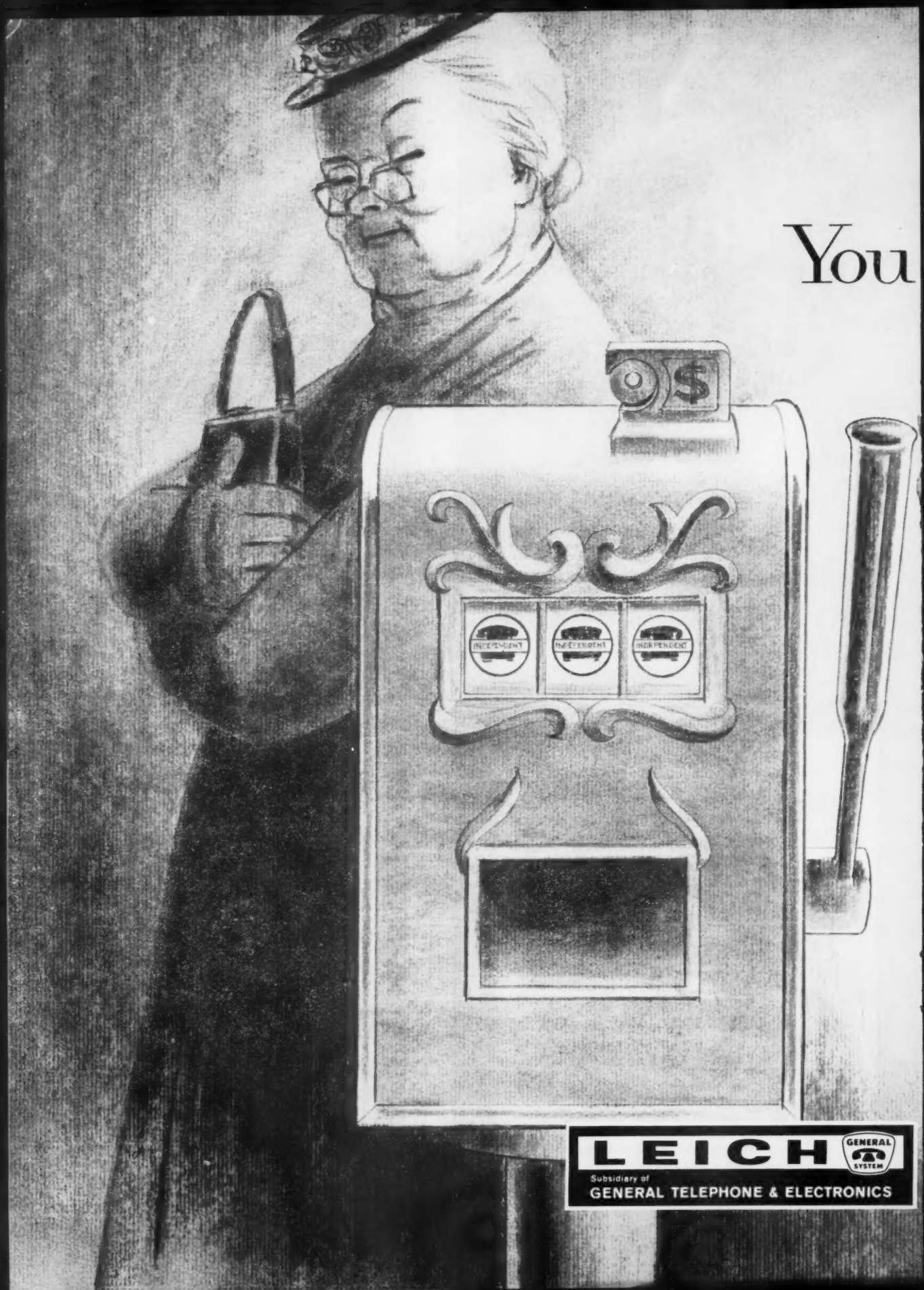
**CALL COMMANDER* PHONE**

For use with the 10-A1 Key System. Provides service for up to 17 outside, PBX or private lines. Pushbuttons light to serve as line signals. Intercom and conference features, too!

*CALL COMMANDER is a registered trademark of Automatic Electric Company

**OUTDOOR PHONE**

A must for loading docks, cab stands, lumber yards, etc. Regardless of the weather, this phone performs with indoor dependability. Locking door limits use, prevents abuse.


You
$
INDEPENDENT
INDEPENDENT
INDEPENDENT
LEICH
GENERAL SYSTEM
Subsidiary of
GENERAL TELEPHONE & ELECTRONICS

# can't win

# if you don't play...

Mean little beast—this slot machine. Yet occasionally it spews out coins in great profusion. You can't get the payment however, *until you put in.*

We, here at Leich, feel this way about the Independent telephone industry. We feel an obligation to put in our fair share to the industry that supports us.

Here's one for-instance: Several years ago we decided that telephone companies could really save on outside plant expenditures by the use of line-concentrators. We made arrangements with the original Swiss manufacturer. We spent several years developing the design, tools, skills and application. Frankly, we spent a pile of money.

Now—line-concentrators are an accepted, proven way to add to outside plant. All the things developed by your Independent telephone manufacturers do not have such a happy ending. But the time and years and the money need to be spent—if our industry is to make progress.

It's quite obvious. Your manufacturer must do a great deal more risk-taking than a distributor.

And that's why . . . we suggest you seriously consider your equipment manufacturer on all your telephone supply purchases.

LEICH SALES CORPORATION • 427 WEST RANDOLPH STREET • CHICAGO 6, ILLINOIS
PACIFIC COAST: 11401 W. PICO BLVD., LOS ANGELES 64, CAL. EAST: 3651 CONNECTICUT AVENUE, YOUNGSTOWN, OHIO
SOUTHWEST: 1227 SLOCUM STREET, DALLAS 7, TEXAS SOUTHEAST: 5126 SOUTH LOIS ST., TAMPA 11, FLORIDA • 2915 W. MOORE ST., RICHMOND, VA.
**manufacturers of telephones, switchboards and related apparatus since 1907**

# "Buried Service Systems"

*(Continued from page 69)*

duces great economies over the separate trench design. Part of the potential economies are dissipated due to the cost of the 12-in. partial backfill and tamping necessary before the telephone facilities can be placed.

This cost problem was recognized by the joint Bell System-E.E.I. subcommittee on buried plant, operating since 1956. The subcommittee, through the cooperation of the line materials industry, instituted extensive joint trench-random separation trials at the line material's high current test plot in Wisconsin. Results of these trials indicated random separation of power and telephone facilities in a common trench was entirely practical from a service and safety viewpoint with certain feasible precautions.

On the basis of these trial results, Illinois Bell and Commonwealth Edison jointly applied to the Illinois Commerce Commission for authorization to start an actual trial. The commission has authorized such a trial wherein the power primary and secondary as well as the telephone cables will be laid at the same depth in a common trench with only random separation.

The authorization is for 10,000 housing units. Power primary and secondary facilities are of a special design that make them readily identifiable from telephone wire and cable.

The first of these installations is now under construction. Preliminary results indicate the savings will be even greater than originally anticipated. One technique that makes this savings possible concerns agreements worked out between the telephone company and the power company. One company will be responsible for doing all the trenching work and placing *both* power and telephone cables in each development. This responsibility will alternate so each company will do its fair share of construction work on a particular project.

I am discussing here *buried* and *not* underground (conduit) systems. It is axiomatic that no conduit system for distribution plant can compete economically with aerial construction.

There are three principal tools involved in the placing of buried cable.

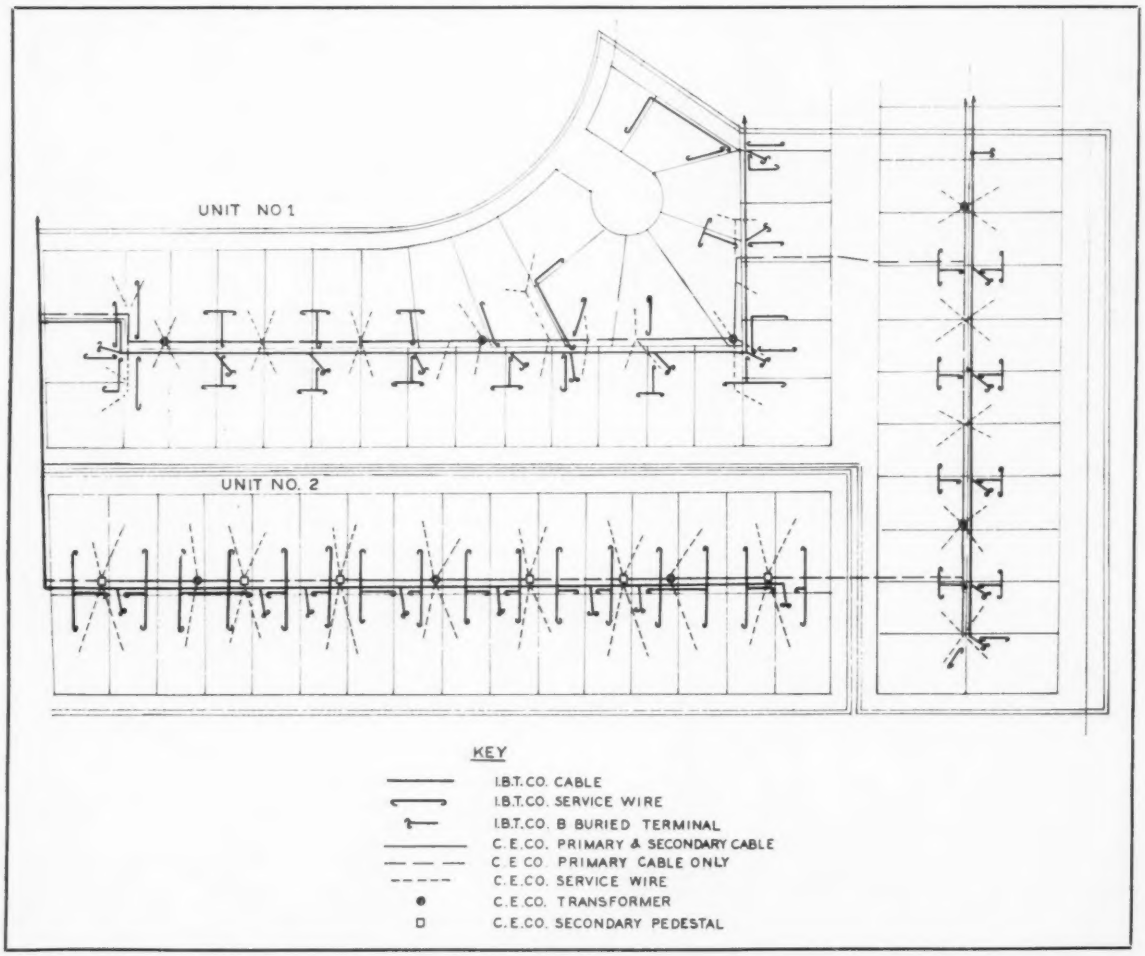



**FIGURE SEVEN: — Layout using the joint trench and 12-in. separation concept.**

## Coast to Coast...

# LINE CLEARANCE COSTS ARE CUT 25 TO 50%

## with FITCHBURG CHIPPERS

**Some of the many Telephone and Power Companies and Departments using Fitchburg Chippers**

Arizona Public Service
**Phoenix, Arizona**
Atlantic City Electric Company
**Atlantic City, New Jersey**
Big Eddy Telephone Co.
**Narrowsburg, Pennsylvania**
Buffalo Valley Telephone Co.
**Lewisburg, Pennsylvania**
C. & P. Telephone Co.
**La Plata, Maryland**
Central Hudson Gas and Electric Co.
**Newburgh, New York**
Consumers Power Co.
**Jackson, Michigan**
Gatineau Power Co.
**Hull, Quebec, Canada**
Kingsbury Electric Co-op.
**De Smet, South Dakota**
McDaniel Telephone Company
**Salkum, Washington**
Millington Telephone Co.
**Millington, Tennessee**
Mt. Vernon Telephone Corp.
**Mt. Vernon, Ohio**
Missouri Power & Light Co.
**Herman, Missouri**
Municipal Lighting Dept.
**Plattsburgh, New York**
New England Power Co.
**Boston, Massachusetts**
New Jersey Bell Telephone Co.
**Vineland, New Jersey**
North Dakota Rural Electric Co-op.
**Grand Forks, North Dakota**
Ohio Central Telephone Corp.
**Patuskala, Ohio**
Pacific Telephone and Telegraph
**Northwest Area**
Pennsylvania Power & Light Co.
**Allentown, Pennsylvania**
Portland General Electric
**Portland, Oregon**
Poudre Valley R. E. A.
**Fort Collins, Colorado**
Prattsburg Telephone Co.
**Prattsburg, New York**
Public Service Co. of Oklahoma
**Lawton, Oklahoma**
Shawnigan Water and Power Co.
**Quebec, Canada**
Somerset Telephone Co.
**North Anson, Maine**
Stratton Light Co.
**Stratton, Maine**
Southern California Edison Co.
**Los Angeles, California**
Utilities Department
**Friend, Nebraska**
Valley Telephone Company
**Silverton, Oregon**
West Jersey Telephone Co.
**Belvidere, New Jersey**

**MAN-HOURS ARE CUT** when line clearance crews use a Fitchburg Chipper, the machine specified by power companies and telephone companies from coast to coast. No more loading, hauling, dumping or burning of bulky tree trimmings. Branches are chipped up fast and blown into the truck or along right-of-way. Whether clearing cross-country transmission lines or disposing of just a few trimmed branches, the efficiency of your own or contract crews is stepped up and costs are down 25-50% with a Fitchburg Chipper.

**EXCLUSIVE** spring-activated feed plate of the Fitchburg Chipper is patented. It adjusts itself automatically to any size brush up to its rated capacity. This exclusive feature assures smooth, efficient and SAFE operation, protects the operator in case foreign materials are fed in accidentally.

**RUGGED** Fitchburg Chippers require little upkeep and are economical to operate. No heavy fly wheel to cause clutch strain. These well-engineered chippers are designed for busy, trouble-free service, no down-time. Easily maintained by crew personnel, they are the choice of leading tree experts.

**FREE: SEND FOR 20-PAGE BROCHURE** in color "Chip Dollars From Your Overhead" with action photos of Fitchburg Chippers used in line clearance work; shows cut-away drawings, specifications. Also ask for 4-pages of case histories describing how these chippers pay off within six months, how they cut man-hours, how to use chips profitably. Write Dept. TEM-110

**FITCHBURG ENGINEERING CORPORATION** FITCHBURG, MASS.

# 32 reasons why customers prefer the new Stromberg-Carlson® F-50 PBX

**Reason No. 1: the exclusive TOUCH-LITE® Turret**

PBX operators helped design it! They wanted a turret that would make their work easier, faster, more efficient. The "Touch-Lite" turret is what they asked for.

Calls are completed, transferred or supervised by a featherlight touch on keys *that light up.* System design permits maximum individual station control and speed of service with minimum effort. The "Touch-Lite" turret is a compact, low-profile, easy-to-use, easy-to-service unit. Handsome cabinet measures 9″ x 15″ x 5″. Comes in tasteful two-tone beige, green or gray. System capacity is 50 lines, 10 trunks, 6 links.

**FOR THE OTHER 31 REASONS** why commercial subscribers prefer this new, modern, dial PBX, ask your Stromberg-Carlson representative. He has literature, prices, ordering information and delivery dates, too.

In Atlanta, call 875-7467; Chicago: STate 2-4235; San Francisco: OXford 7-3630; Kansas City: HArrison 1-6618; Rochester: HUbbard 2-2200.

LITE"
GENERAL DYNAMICS | TELECOMMUNICATION

and service wires. These are plows, trenchers and pipe pushers. Let's consider them separately.

It is generally accepted that plowing, where physical conditions permit, is substantially cheaper than trenching for buried plant. Fortunately, we're finding there are many more places where it's feasible to plow in urban distribution systems than was originally expected. This is largely a matter of construction technique and experience. I'm sure as we go into the future, we'll find it feasible to plow even more extensively than at present.

Available in the open market is a range of plows designed for cable laying purposes. No one plow will suffice for all purposes and under all local conditions. We've found for urban use that small track-laying plows with attached articulating blades are most suitable. The track-laying characteristic permits better flotation and traction. The articulating rather than separate towed plow reduces equipment length and is more maneuverable. *Figure Nine* illustrates one of several types we're using extensively and successfully.

Trenchers cover a wide range of sizes and characteristics. Soil conditions have an even greater influence on trencher requirements than is the case with plows. We find a relatively light mobile type of trencher is best suited for installations where we trench the service wire. A somewhat heavier duty trencher appears to be more suited for the longer straight runs where we're placing distribution cable. *Figure* 10 illustrates one of several lighter trenchers we have found suitable for placing service wires. *Figure* 11 illustrates one typical medium-duty trencher we've found suitable for the longer runs where we place the distribution cable.

There inevitably are situations where pavement is placed before we can get our cable in. Here any form of cable placing that involves breaking the ground surface is expensive due to the cost of restoring pavement. Pipe pushing is the obvious answer. Unfortunately only a few of the pipe pushers and none of the push pipe commercially available proved entirely suitable for telephone use. *Figure* 12 illustrates one of the commercially available pipe pushers with which we have had success. The pipe pusher is no better than the push pipe. We haven't found a commercially available push pipe sufficiently sturdy to be entirely satisfactory.

Bell Laboratories designed, and we are having made for our use, a heavy duty sectional push pipe that has been spectacularly successful. *Figure* 13 illustrates the characteristics of the push pipe sections as well as the lead element.

The pipe is made of double extra strong steel pipe. The lead unit, slightly larger in diameter than the push pipe, is prepared for us. We find the successful use of this push pipe is dependent on having the lead unit slightly larger in diameter than the push pipe, reducing the friction between the pipe and surrounding soil as it is pushed through the earth.

## Construction Materials and Equipment

OUR PRINCIPAL equipment and material components are involved in a typical distribution system. These are the terminal, distribution cable, service wire and house attachment. Each of these compon-

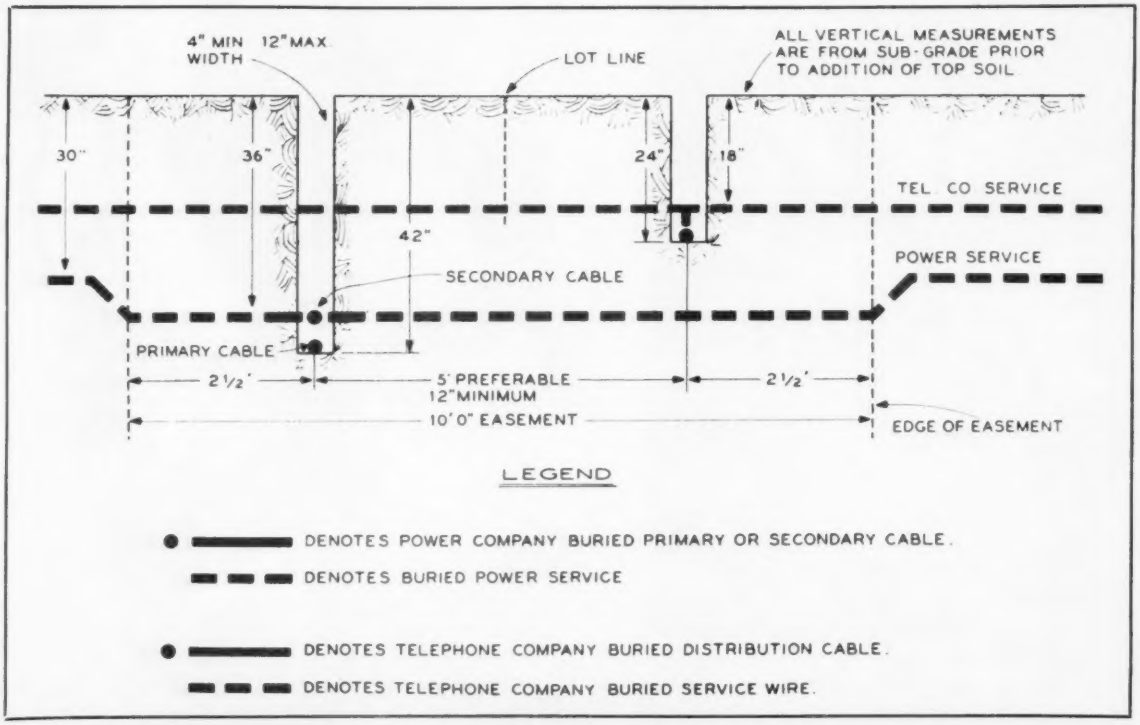



**FIGURE EIGHT: — Vertical separation and clearances can be realized by arrangement shown above.**

FIGURE NINE: — One of several types of plows used by Bell System companies.

FIGURE 10: — One of several lighter type trenchers used by Bell System companies for placing service wire.

FIGURE 11: — Typical medium duty trencher suitable for long runs where distribution cable is placed.

FIGURE 12: — Top picture shows Type B pipe pusher. Bottom photo shows pipe pusher with cribbing in place during pushing operation.

ents have been modified and refined during the past few years, but satisfactory examples of each are now commercially available.

*Figure* 14 shows one of the pedestal terminals of current design. It has proved to be satisfactory, reasonably priced and — with proper craft training — convenient from the viewpoint of station installation work.

If the design calls for looping the cable through terminals mounted on the foundation wall of each house, a different type of terminal is required. *Figure* 15 is an example of

***Please turn to page 94***

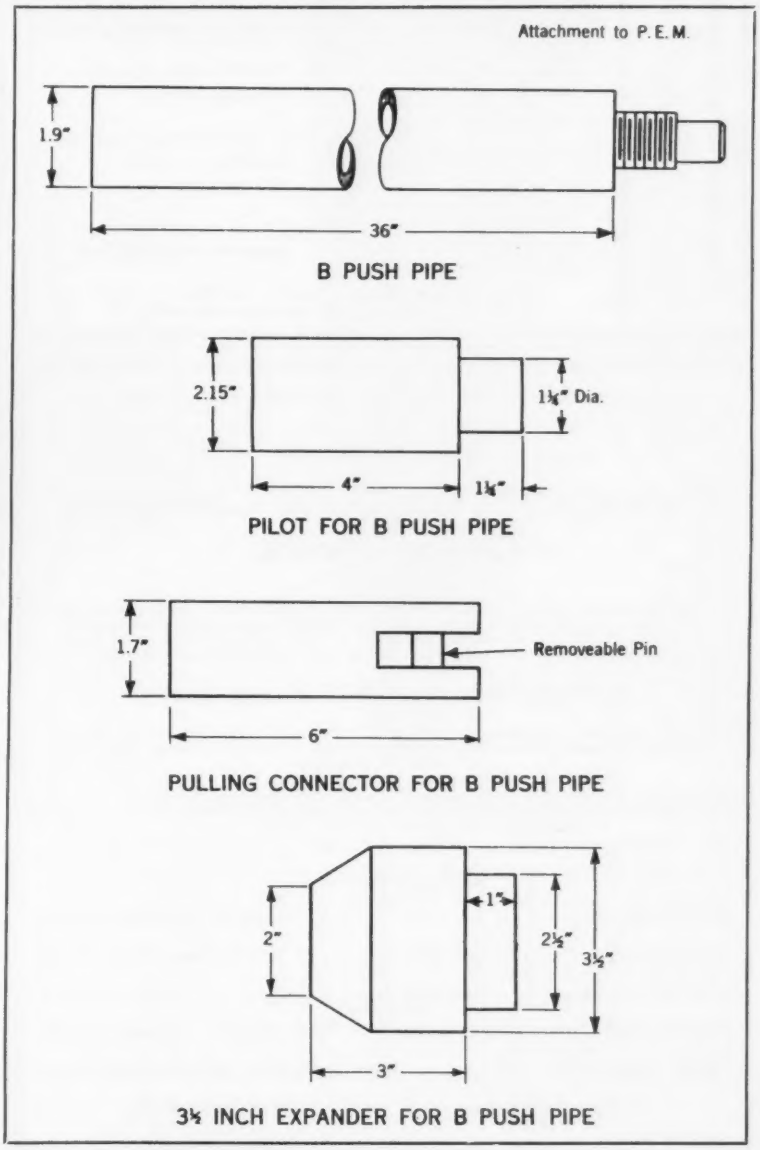


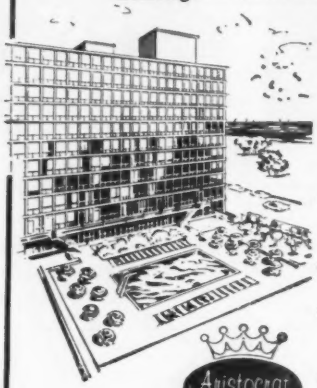

FIGURE 13: — Characteristics of the push pipe sections.

Make Reservations Now For The 1962 U.S.I.T.A. Convention Held At The Conrad Hilton Hotel

CHICAGO'S NEW DOWNTOWN MOTEL

ESSEX INN

Michigan Ave. at 8th St. Across from Conrad Hilton
Chicago—WE 9-2800—TWX-CG82




- Closest motel to all convention centers, commercial and shopping areas, theatres, museums, art centers, and concert halls.
- Free motel parking, in-and-out privileges.
- Heated swimming pool.
- Free TV, radio, ice cubes wake-up coffee.
- Complete group meeting facilities for up to 500 persons.
- 24-hour switchboard, valet and room service.

*All credit cards honored; member of AAA, Best Western Motels. Reservations Quality Courts. Write for Reservations Dept. 36*

Airport limousines stop at our door.
YOUR HEADQUARTERS FOR BUSINESS AND PLEASURE

*This is not an offer of these securities for sale. The offer is made only by the Prospectus.*

NEW ISSUE

667,413 Shares

Hawaiian Telephone Company

Common Stock

(par value $5 per share)

The Company is offering 606,739 shares of Common Stock to its stockholders at the rate of one share for each seven shares held of record at the close of business on September 25, 1961, with the right of oversubscription, and 60,674 shares of Common Stock to its employees, for subscription at $17.50 per share. The offers to stockholders and employees will expire at 4:30 P.M. on October 17, 1961.

Subscription Price $17.50 per Share

The underwriters have agreed, subject to certain conditions, to purchase any unsubscribed shares and, during and after the subscription period, may offer shares of Common Stock as set forth in the Prospectus.

*Copies of the Prospectus may be obtained in any State in which this announcement is circulated from only such of the underwriters, including the undersigned, as may lawfully offer these securities in such State.*

Kidder, Peabody & Co. Incorporated

Blyth & Co., Inc. — The First Boston Corporation

Eastman Dillon, Union Securities & Co. — Goldman, Sachs & Co.

Hallgarten & Co. — Harriman Ripley & Co. Incorporated — Lehman Brothers

Merrill Lynch, Pierce, Fenner & Smith Incorporated — Paine, Webber, Jackson & Curtis

Smith, Barney & Co. — Stone & Webster Securities Corporation

White, Weld & Co. Incorporated — Dean Witter & Co.

*September 29, 1961.*

# "USITA MEETING"

*(Continued from page 48)*

Frank G. La Prade, president of the Lee Telephone Co., Martinsville, Va. President of USITA. La Prade succeeded Clifford C. Pearce, Riceville, Ia.

Other elected officers are: 1st Vice President, Harold Bollinger, Waconia, Minn.; 2nd Vice President, R. E. Rudolph, Ellensburg, Wash.; 3rd Vice President, Paul Henson, Kansas City, Mo.; Executive Vice President, Clyde S. Bailey, Washington, D. C.; Treasurer, Carl D. Brorein, Tampa, Fla.; and Secretary and Assistant Treasurer, Courtney Snyder, Washington, D. C.

### New ITPA Officers

DIRECTORS elected to three-year terms on the ITPA board are: Harold Bollinger, Waconia, Minn.; Wesley Loomis, III, Des Plaines, Ill.; and F. G. Winters, Houston, Texas.

Directors serving unexpired terms are: Ray Blain, Falls Church, Va.; J. N. Johnson, Fort Myers, Fla.; C. C. Pearce, Riceville, Ia.; Bertha B. Blair, Ephrata, Pa.; Hugh A. Barnhart, Rochester, Ind.; C. E. McCormick, Erie, Pa.

Ray Blain, Falls Church, Va. was elected ITPA president. Other ITPA officers are: Vice President, C. E. McCormick; Vice President, Mrs. Mayme Workman, Springfield, Ill.; and Executive Secretary and Treasurer, Sophia K. Davis, Springfield, Ill.

### Clyde S. Bailey Comments

IN A REPORT not presented to the USITA Convention but distributed to its membership, Clyde S. Bailey, executive vice president of the association, said:

"The financial health of our association is good. A satisfactory reserve now has been built up which will prove of value in event of emergency or a slipping in the nation's economy. It will assist the association in performing its duties under varying conditions of uncertainty.

"As a nonprofit organization it

**In the time it takes this to make 1 hole in concrete**

## this makes 5 permanent fastenings

The timesaver on the right is called Shure-Set.® Instead of making holes in concrete (slowly) it makes permanent fastenings (quickly). This easily. Insert a Shure-Set fastener in one end. Strike the other end with a hammer. Less than 5 taps and the fastener permanently anchors a 2 x 4 – or a duct strap, or a junction box, or most anything – to concrete. No drilling. No expansion devices. No powder charge. And no sweat. If your time is money – Shure-Set saves a lot of both – it'll pay for itself first day out on the job. Shure-Set tools and fasteners are available from your local Ramset or Shure-Set dealer. He's listed in the Yellow Pages, under "Tools."

**Ramset** WINCHESTER-WESTERN DIVISION **Olin**
303-J Winchester Ave., New Haven 4, Conn.

would be improper to amass an excessive reserve. But as a business entity with a continuing responsibility to its membership in a dynamic era, it is only prudent to take measures to assure fiscal health."

(The association's work is carried on under the careful supervision of a 36-man board of directors and an 11-man executive committee.)

"Membership dues are established each year by the executive committee and are subject to review by the board of directors. Dues are kept as low as possible," Bailey said, "consistent with association needs and its duty to represent well the interests of member companies. Indications are that, because of certain nonrecurring expenses, we'll have a reduction in dues applicable to 1962."

### Membership Situation

INCLUDED in the association's membership are 810 Independent telephone operating companies, 53 more than this time last year, 7 holding companies, and 137 manufacturers and suppliers. Total membership of 954 is the largest in the association's history.

The 810 operating company members represent about 87 per cent of 11,915,000 Independent stations in the United States, including those in Alaska and Hawaii together with Puerto Rico. In the total membership figure are 234 REA commercial company borrowers and 44 cooperatives. The REA group represents 34 per cent of all operating company members.

Operating company members represent 87 per cent of the Independent telephone industry in stations in service, 90 per cent of gross revenues, and 89 per cent of plant investment.

The trend toward mergers and consolidations in the Independent industry is rapidly reducing the number of individual operating units and the number of potential members.

In 1922 there were 9,200 companies. In 1940 there were 6,400. A year ago there were 3,600. Today there are 3,190. It has been estimated that in another 10 or 15 years there may be only 1,000.

"There's an increasing view that the mergers have strengthened the fabric of Independent telephony and resulted in a higher grade of service to the telephone using public," Bailey pointed out.

The trend has its counterpart in what has happened in the electric, gas, bus, truck, and automobile industries, as well as other areas of business activity. Mergers in the railroad field are being considered increasingly.

Although there have been acquisitions of Independent property by Bell associated companies, by far the greatest number of mergers have been in the Independent branch of the industry.

### The Industry's Growth

IN THE 12 MONTHS since the previous annual convention, the gross revenues of each of 111 companies now exceed $1 million a year, with the largest company grossing more than $129 million. In another year still more companies will be in the million-dollar class.

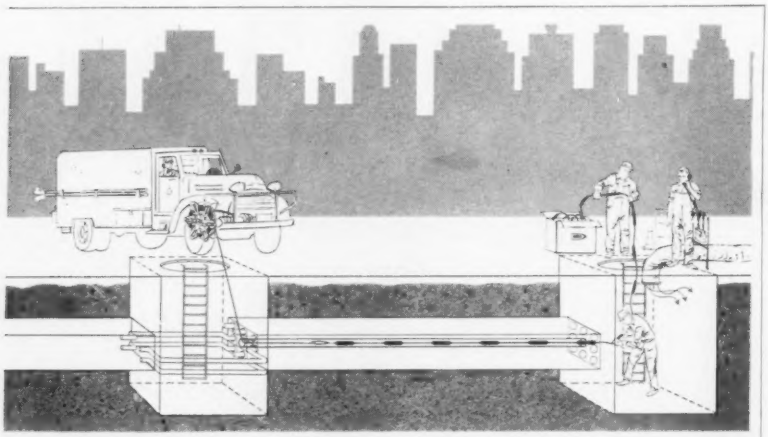
This is testimony to the soundness and growth of the telephone business. The great body of Independent companies, smaller in stations and revenues but themselves experiencing growth, continue as important parts of the business and social life of the thousands of towns and communities in which they provide telephone service.

Bailey emphasized that the telephone industry is on the move. More and more stations are being added each year. More plant is being constructed. More money is being invested. Communication frontiers are being pushed farther and farther back.

Domestic and international communication through the use of high-altitude satellites is near. Technological advances are going forward at a faster pace than ever before.

"Conversions to dial operation are being speeded," Bailey said. "Ninety per cent of Independent phones and 97 per cent of Bell System phones are already dial. In a few years all but a mere handful of telephones will be dial operated.

"There are about 147 million tele-

CABLE FAILURES REDUCED OVER 96% WITH
**DURCO IMPRESSED CURRENT ANODES**

In one congested metropolitan area, the number of lead covered cable failures dropped from over 50 per year to 2 after the application of impressed current cathodic protection. These two failures resulted from deeply pitted areas on the cable sheath prior to application of the negative potential.
Durco impressed current anodes have proved far superior to other materials. Want more detailed information on the Durco Type G anode for Duct Applications?

*Write for Bulletin DA/7.*

THE DURIRON COMPANY, INC., DAYTON, OHIO DURCO

phones in the world, of which 53 per cent are in the United States. New records are being made each year."

Although from the association's widely circulated pamphlet *An American Story* the figures are somewhat familiar, in a report of this kind it may be well to set out the tabulation showing the relative sizes of the two segments of the industry in the United States at the end of 1960:

| | INDEPENDENT | BELL SYSTEM |
|---|---|---|
| Total telephones | 11,428,000 | 62,989,000 |
| Number of operating companies | 3,300 | 23 |
| Number of exchanges | 10,705 | 6,726 |
| Investment in telephone plant | $4,018,650,000 | $24,755,378,000 |
| Gross revenues | $1,019,500,000 | $ 8,110,562,000 |
| Number of employes | 100,100 | 594,900 |

"Although the Bell System is by far the larger of the two segments of the industry, it is important to remember the Independents service more than half of the geographical area of the nation," Bailey said.

Alaska and Hawaii, the newest states, are served entirely by Independent companies. And Independents now serve five state capitals—Juneau, Alaska; Tallahassee, Fla.; Honolulu, Hawaii; Jefferson City, Mo.; and Lincoln, Neb.

Bear in mind the population explosion throughout the country is increasing demand for telephone services in the smaller towns and rural areas. These communities increasingly are becoming beneficiaries of population shifts.

It doesn't require an optimist to visualize the good things that lie ahead for the Independent telephone companies of the country and the investors who put their savings into these regulated ventures.

### Merchandising

TELEPHONE sales programs should have three objectives: (1) Sell service that people will keep; (2) sell service that doesn't have high-move costs; and (3) sell items that have high salvage value. These objectives must be met, if your sales program is to be profitable, according to Ben Smith, general merchandising manager of Southwestern Bell Telephone Co., St. Louis, Mo.

Smith, nationally-known authority on sales and merchandising, told USITA Convention delegates that telephone sales programs must encompass total marketing.

"It's not enough just to sell," he warned. "You must study your market, and be sure you can relate your sales programs to the three objectives of profitable selling."

He said telephone companies have profits waiting for them in residence and farm markets through sales of extension phones, second main lines, additional listings, phones for teenagers and such special items as the illuminated dial set.

"But telephone companies must go after those profits through well-planned, well-executed sales campaigns," he added. "First, you must learn where the opportunities lie. There are many sources for this information — census material and surveys of all kinds in addition to alert everyday observation by sales-minded telephone people on the job.

"Less than one per cent of the average annual household expense now goes for communications. This alone shows that customers can afford more telephone service. People are on the move, going into new homes either across the street or across the nation. This means a constant residence market for telephone service and a natural opportunity to contact customers . . . While you're there is the time to sell them what they need," he emphasized.

"Households are getting bigger, too," Smith said, pointing to Department of Commerce figures showing the average household has 2.22 bedrooms, and 38.1 per cent of all households have two or more bedrooms. This should suggest telephone sales potential, too.

"People buy extension telephones


***PLEASE YOUR FRIENDS with a***

# gift

SUBSCRIPTION TO

**TELEPHONE ENGINEER & MANAGEMENT**

*"The Telephone Industry Magazine"*

**7720 Sheridan Rd., Chicago 26, Ill.**

Please send a year of TE&M to:

name

company title

address

city & state

name

company title

address

city & state

name

company title

address

city & state

my name

address

city & state

☐ payment enclosed ☐ bill me

Subscription rates: U. S. & Poss. $4.00 per year; Canada $5.00 per year; All other countries $6.50 per year.

**SPECIAL CHRISTMAS BONUS**

**Telephone Engineer & Management will send a free copy of the new "TELEPHONE HANDBOOK FOR PLANTMEN & MANAGERS with each gift subscription ordered through December 15, 1961.**

to save steps . . . to avoid trips up and down stairs or through the house to get to a ringing phone . . . as a help during illness . . . as a general convenience . . . for added privacy and security . . . for night and business calls," Smith said. "Yet a survey of 1-telephone homes shows 29 per cent have the phone in the living room, 23 per cent in the dining room, 15 per cent in the hallway. None of these are locations where people spend a lot of time."

Smith emphasized the constant market, size of households, present location of phones in 1-telephone homes — plus knowledge of why people want additional phones — all show sales potential in the residence market.

Is there a market for two main telephones or more per home? Smith made his point dramatically by showing a picture of a boat with two outboard motors. "Do you suppose this boat owner could afford more than one main telephone in his house?" he asked.

He pointed out one important thing that makes this residence market potential worth working on is: At the same time we provide the customer with better service, we also are adding profitable business for the telephone company. Smith noted the average life of a residence extension in his company is 8¼ years. It takes less inward movement to realize a gain with residence extensions.

"Marketing and profitable sales aren't a matter of fancy gimmicks," he said. "It's mainly a job done by everyday telephone people alert to customers' needs and wants, and taking natural opportunities to merchandise the services we offer."

To illustrate this point, he showed a slidefilm about sales efforts and results of telephone people in Town X.

Smith offered a variety of merchandising tips:

— Color phones stimulate extension sales and apparently have longer location life than black telephones.

— The kitchen is now the preferred location in the home. Bedroom preference has risen. The old favorite living room has dropped in popularity.

**Ben Smith, authority on sales, marketing and merchandising and general merchandising manager of Southwestern Bell Telephone Co. since 1956, addressed the telephone men and women at the recent USITA Convention in Chicago October 9-11.**

— People tend to overestimate, rather than underestimate, the cost of additional phones . . . so price education of customers is important.

— Homes with more than one phone still are fertile fields for extension sales. Of these, Southwestern Bell studies show 89 per cent have only one extension, and only 2 per cent have three or more.

— Special equipment items, such as illuminated dial and volume control sets, can be marketed better than they are being marketed today.

— A second straight line is a promising money-maker in the residence market, with the crop of teenagers coming on.

"Don't overlook the farm market," Smith warned. "Farmers' calls are urgent. They depend more and more on the telephone to run their business — and farming is big business. Today's farmer is acclimated to modern living, and his telephone needs and wants are modern. Farmers want service in their farm buildings other than the home. They have shown interest in such things as signaling devices, loudspeakers in the yard, loudspeaker-microphone systems, intercom systems between buildings."

Smith's advice on selling the farm market: "Forget the old 'horse and buggy' farm image. The little red schoolhouse has been replaced by ultra-modern school buildings to which the farm youngster may drive in his little red Thunderbird.

"Are we selling the residence and farm markets, or do we wait for growth to make our gain?" Smith asked. "Customers want better telephone service. They appreciate suggestions from telephone people on ways to improve their service."

On the "how" of selling residence and farm markets, Smith advised:

— On each new connect or change of address contact, suggest to customers ways to improve their service with additional phones, special equipment, extra listings in the directory. Do this on other types of business office contacts, too.

— On plant-premise visits, show bedroom and kitchen phones in color, and ask customers for orders.

"These efforts will require continued enthusiasm and interest by you and all your people, but they'll pay off in better service for your customers, more services added for your customers, and more revenues for your company at low cost," Smith said.

**Plant Committee Reports**

M. S. BODINE, Jefferson City, Mo., chairman of the USITA Plant Committee, in presenting the group's report offered two initial comments on the lack of requests to it from member companies for assistance during the past year:

"Consolidation of smaller with larger companies has given the smaller companies a source of technical know-how that hadn't been available to them previously," Bodine said.

"And many smaller companies have become REA borrowers. Many questions they might have asked us are answered by REA manuals and engineering firms engaged by them."

He stressed the Plant Committee is willing to help any USITA member company asking for assistance.

The committee met at St. Louis in June, outlining speakers and subjects for the Plant Conference at the USITA Convention. Also during the St. Louis meeting the committee discussed telephone industry problems.

"The most important of these to

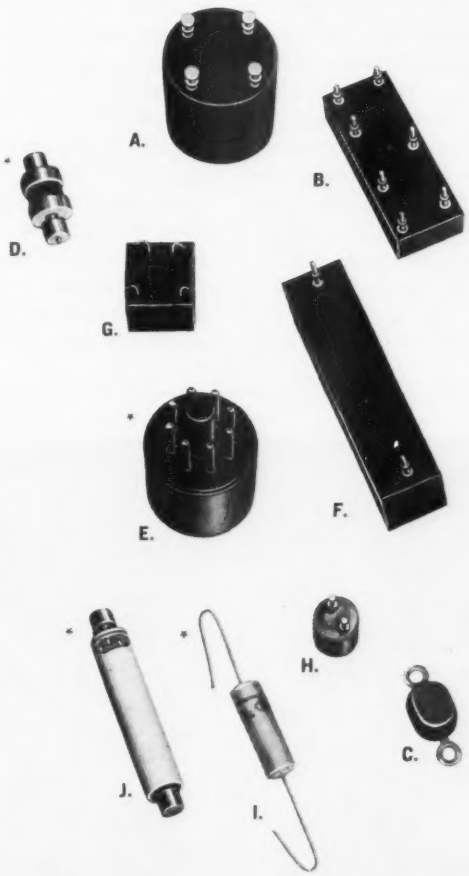
# To 50,000 peak reverse volts per block to 6 amps DC per block□□

***Solitron's new double diffused high voltage potted rectifier assemblies***

Once again Solitron makes a valuable addition to solid state technology — a new line of double diffused high voltage potted rectifier assemblies rated up to **50,000 peak reverse volts per block and up to 6 amps DC per block!** Already in use at various military installations, the SDI Series Solidpaks are available in single phase (half wave, center tap or full wave) and three phase (half wave, full wave or star) ...or in protective networks and tube replacements.

Solitron potted rectifier assemblies feature high reliability, high miniaturization (up to 6000 volts in ¾" x ¾" x 1") and high surge ratings. Operating and storage temperature range is −65°C to 150°C. Life expectancy is unlimited. Regulation is excellent. **The SDI Series is the widest line of various configurations available for immediate delivery** — over 1,000 standard sizes to choose from. Mechanical and Electrical Engineering Service is free.

Write today for new 10-page technical catalog on the complete line of SDI Series Solidpaks!




**A.** Protective Network
**B.** Double Full Wave Bridge
**C.** Telephone Click Reducer
**D.** 2 to 6 Amps Ferrule Rectifier
**E.** Tube Replacement or Full Wave Bridge
**F.** Single Phase — Half Wave
**G.** Single Phase — Full Wave
**H.** Single Phase — Half Wave or Full Wave
**I.** Single Phase — Half Wave Ceramic Encapsulated
**J.** Single Phase — Half Wave Ferrule Type

*Available for JEDEC, "1N" Replacement.

# Solitron
## DEVICES, INC.
**500 Livingston St. • Norwood, N. J.**

member companies," Bodine said. "is that of training personnel to handle technical phases of plant maintenance that the increasing use of electronic devices is forcing on us.

"In the near future we'll be faced with maintaining all present-type equipment and, in addition, electronic switching systems, data processing equipment, computers, etc. associated with automatic toll ticketing equipment, as well as other types of mechanical devices.

"Many of us will be using carrier for the first time. All this means we'll be forced to organize training programs for our present employes, and many of us in the smaller category won't be able to set up a training school."

Bodine urged those in this group to look to their larger neighbors for help in this training. He indicated the larger companies couldn't be expected to assume financial burdens in training employes of the smaller companies but would be glad to assist if the smaller companies paid their own ways.

Manufacturers also probably would provide schooling services on their equipment, the committee suggested, adding that telephone companies obviously couldn't send their entire work forces for schooling at one time.

The committee emphasized its belief in the current growth of the majority of Independent telephone companies, and pointed out that at such times plant forces are probably extended to their limits in plant construction and installation — a situation often deferring maintenance.

"Deferred maintenance can be like cancer," Bodine said. "It'll continue to spread if not checked. It might be far better for us to secure the services of one of many able contractors to do construction work, so our forces can take care of necessary maintenance."

He also mentioned the appropriateness — with the national crisis over Berlin and the increasing importance of communications in national defense — for telephone companies to take a look at the adequacy of their plants.

"Remember, it'll be far easier to *beef up* certain facilities now, rather than wait for a national crisis to develop," Bodine said.

**Commercial Committee Report**

THE REPORT of the USITA Commercial Committee, presented by Committee Chairman E. H. Utzman, Brownwood, Tex., emphasized the committee's opinion that some of the industry's credit and collection problems could be eliminated if proper credit investigation is made.

"Credit investigation is a major function of any well operated business office," Utzman reported. "There are many ways that credit investigation can be made, some of which can incur considerable cost, such as telephone calls. Most investigations, however, can be handled through the mails.

"The committee is giving consideration to a universal credit reporting plan. It is the thinking of the committee that such a credit investigation plan should be one that is recognized and acceptable to all oper-

ating telephone companies. No definite plans have been worked out at this date, and it is planned that further work will be done on this in 1962."

Discussing the elimination of four-party service and conversation timing, Utzman said it was the consensus that the elimination of four-party service is practicable in the larger metropolitan area where calling rates, as a rule, are extremely high.

"It was the thinking of the committee," he said, "that in small rural communities there would always be a need for four-party service, and the industry should give consideration to this fact."

Noting that some companies have installed timing devices for local calls and have given consideration to placing timing devices on Extended Area Service Trunks, Utzman reported the timing devices will automatically disconnect the call at the end of a specified time.

"Use of these timing devices is designed to hold down length of calls and prevent overloading of equipment," he said. "The committee does not think these devices will solve the problem, but rather will create service complaints."

Utzman said that grade of service in relation to rate differentials was reviewed with interest by the committee in view of the fact it is felt much can be accomplished by providing proper differentials in different classes of service.

"This can be used in many ways," he said. "Primarily of concern today is the use of rate differentials between classes of service to create increased demand for one and two-party service."

Noting that Extended Area Service in many areas continues to be a major problem in the telephone industry, Utzman said the problems are being overcome in many states where public commissions have issued regulations for providing the service.

"The committee reviewed problems that still exist in many areas where no regulations have been established by commissions and satisfactory settlement policies have not been worked out between companies," he said. "Much information can be furnished to the company confronted with these problems if the company will call on the USITA for assistance."

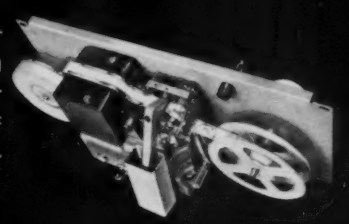
Referring to the Bell System's Mechanized TWX Program that now has an in-service-date of September, 1962, Utzman reported that in view of the Bell System program, many companies who have in the past permitted the Bell company to own and operate TWX Service Machines in Independent territories are now thinking about purchasing the TWX equipment.

"Those companies considering this plan should give careful consideration to the type of machine that would be acquired and whether or not they are suitable for adding conversion kits to meet the requirements of the improved service demand," he said. "Maintenance might be a problem with some companies. The USITA can be helpful to member companies


A Toll Position costs you approximately $1,250 per year! Operator wages to man that position can run to another $8,750 **annually!**

**NORTH ELECTRIC**
**Premium AuTollizer®**

ANNUALLY!



enables each existing operator to handle ⅓ **more** toll calls. Present traffic can be handled at a proportionately lower cost or you can meet the demands of increased traffic without enlarging your operator force.

**Your North Electric representative can show you how much more PREMIUM AuTollizer can do and save for you!**

*THE DYNAMIC FORCE IN THE TELEPHONE INDUSTRY*

***NORTH ELECTRIC COMPANY***

GALION, OHIO

NORTH

who might need information on this program."

Utzman said WATS and Telpak are gaining considerable publicity throughout the country.

"It was the opinion of the committee," he said, "that while these new services are needed, there would not be too much demand outside of large industrial areas and as a result, many companies may never have use for the services. The committee recommends that all operating companies familiarize themselves with the services to the extent that settlements with connecting companies can be determined prior to establishing of service, if possible. USITA's Committee on Settlements and New Service can be of considerable help to any company desiring any information on the new services."

Reporting the USITA Commercial Committee has reviewed Bell System negotiations with the American Hotel Association regarding the payment of commissions on toll calls originating and terminating over hotel and motel PBX Systems, Utzman said that companies operating on full costs are not affected by Bell Company adjustments in these commissions, but many other companies are affected and are immediately called on by their hotel and motel customers to meet the Bell Company's commission allowances.

"The committee recommends," he said, "that the Bell Company discuss changes in the hotel and motel commissions paid with the USITA's Toll Settlements Committee before agreeing with hotel and motel associations."

Utzman told the Commercial Conference the committee thoroughly reviewed General Tariffs, particularly those covering rules and regulations.

"It is the thinking of the committee," he said, "that General Tariffs could be simplified in many respects that would be most helpful to the people administering them and would be less confusing to the public. We have particular reference to the pricing out of major items such as PBX Systems that involve many different classes of service. The committee is giving consideration to developing a suggested tariff on certain phases of equipment as a suggestion to the industry. We refer to this as 'Package Pricing,' which would simply mean that one basic price would be quoted instead of listing all of the equipment in detail. Additional work is scheduled to be done on this in 1962."

Reporting that service area problems in some localities are on the increase, Utzman said, "These problems are primarily brought about by the extension of municipalities into previously recognized rural areas."

"The committee," he said, "strongly urges all companies to review their service area boundaries and, if adjustments are found to be needed, that they be made at once."

**Part II of the USITA Convention Story will appear in the Nov. 1, 1961, issue. Included will be reports by the USITA Traffic Committee, Accounting Committee, Eng. Committee, and subcommittees on All-Number Calling, Direct Distance Dialing, Engineering Education, New Techniques and Devices, Radio and Carrier, Technical Liaison with AT&T Co., and Transmission and Protection.**

STATEMENT REQUIRED BY THE ACT OF AUGUST 24, 1912, AS AMENDED BY THE ACTS OF MARCH 3, 1933, JULY 2, 1946 AND JUNE 11, 1960 (74 STAT. 208) SHOWING THE OWNERSHIP, MANAGEMENT, AND CIRCULATION OF —

Telephone Engineer and Management published semimonthly (on the 1st and 15th of each month) at Rochelle, Illinois for September, 1961.

1. The names and addresses of the publisher, editor, managing editor, and business managers are: Publisher, Roy F. Smith, 7720 Sheridan Road, Chicago 26. Editor, John G. Reynolds, 7720 Sheridan Road, Chicago 26. Managing editor, Robert Dorsett, 7720 Sheridan Road, Chicago 26. Business manager, Donald C. Sorensen, 7720 Sheridan Road, Chicago 26.

2. The owner is: (If owned by a corporation, its name and address must be stated and also immediately thereunder the names and addresses of stockholders owning or holding 1 percent or more of total amount of stock. If not owned by a corporation, the names and addresses of the individual owners must be given. If owned by a partnership or other unincorporated firm, its name and address, as well as that of each individual member, must be given) — Roy F. Smith, 7720 Sheridan Road, Chicago 26. Elizabeth E. Smith, 7720 Sheridan Road, Chicago 26.

3. The known bondholders, mortgagees, and other security holders owning or holding 1 percent or more of total amount of bonds, mortgages, or other securities are: (If there are none, so state.) — There are none.

4. Paragraphs 2 and 3 include, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting; also the statements in the two paragraphs show the affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner.

5. The average number of copies of each issue of this publication sold or distributed, through the mails or otherwise, to paid subscribers during the 12 months preceding the date shown above was: (This information is required by the act of June 11, 1960 to be included in all statements regardless of frequency of issue.) 9340.

John G. Reynolds

Sworn to and subscribed before me this 28th day of September, 1961.

(SEAL) Richard A. Reynolds
(My commission expires Feb. 12, 1962.)

## Phone Sitter For Your Ad

A NEW phone sitter service, operating around the clock to receive classified advertisers' return calls when the advertiser isn't available, has been introduced by the Advertising Department of the *Champaign-Urbana (Ill.) Courier*.

This service does for the advertiser what a babysitter does for parents. Here's how the service works:

If you wish to use the service with your classified ad, you're assigned a number, inserted in the advertisement. The ad may say: Call EM 0-0000, or FL 9-1701, PHONE SITTER 000.

If the caller gets no answer at your number, he calls the phone sitter number and leaves his message. When you return home you call FL 9-1701 and pick up all calls . . .

The extra cost for this service is nominal, according to the Courier ad manager.

# "The Changing Facade of Communications"

(Continued from page 53)

telephone group which has, and will continue to have, the destiny of the communications art in its keeping.

### Progress Under The Free Enterprise System

THE BELL System and the Independents combined operate more than one half the telephones in the world. This has come about, not under government ownership or government direction, but under the Free Enterprise System, where the individual is rewarded in proportion to the sweat and effort he puts forth

*Please turn to page 90*

# Complete, compact John Deere 1010 unit equips you for buried plant construction

Number, please? We call it the "1010" Crawler with 230A Cable Plow. Many telephone companies call it a truly low-cost way to realize all the advantages of buried-wire construction. And they're right, as the performance of the machine demonstrates.

Light-footed and maneuverable enough for efficient drop wire work in residential areas, the "1010" also has what it takes for dependable service on those marathon RFD runs.

The unit lays multiple pairs of wire, or insulated cable up to 1-13/16 inches in diameter, to any depth from 6 to 28 inches. Remaining cut at the surface is negligible—quickly compacted by the line truck or tractor.

Wire or cable is inserted in the cable guide without cutting, threading or splicing. Entire cable channel is opened by removal of a locking pin. Roller-equipped guides gently direct the cable through the plow.

Look in your own yellow pages for the name of the John Deere dealer serving your area. He'll be pleased to arrange a demonstration for you. If long-term leasing might meet your needs, he has the facts on that, too.

John Deere, 3300 River Drive, Moline, Illinois.

JOHN DEERE

TRACTORS
BACKHOES
CABLE PLOWS
AND
CONSTRUCTION
EQUIPMENT

FLEXIDUCT
in
world-wide
use

takes
wiring over
any floor

Installations in all 50 states, Canada, Mexico, Europe, South America, nearly every foreign country.

Made of durable, extruded rubber; most efficient electrical and communications over-floor wiring protector; flexible, economical, permanent. Easily, quickly cemented down—no noisy drilling, pounding. Caster-based equipment rolls safely, smoothly over beveled sides. With universal parts, fittings (tee, ell, riser, combination).

**3 Flexiduct sizes:** from single conductor to 75 pair cable, plus quarter round.

**Always keep Flexiduct on hand. Available through:**

Buckeye Telephone & Supply Co.
Graybar Electric Co., Inc.
ITT Kellogg
Leich Sales Corp.
Stromberg-Carlson
Winders & Geist, Inc.
**Western Electric Co., Inc., supplies Bell Systems only.**

*Write for descriptive folder.*
**WINDERS & GEIST, INC.**
**2219 North Cotner Blvd.**
**Lincoln, Nebraska**

and is free to enjoy the fruits of his labor.

It has come about because we live in a country that operates under the greatest document ever written by man — the Constitution of the United States. Therein lie the fundamental principles which have given us the blessings we hold so dear.

We need build no walls around our borders to hold our people. Here, profit is the oil which turns the wheels of progress, keeps grass from growing in the streets, fills vacant buildings, puts bread on the table, pays for each penny that goes into every government project, and pays every dollar in salary to every government employe from the janitor of the local town hall to the President of the United States.

Measured by any standards, our private enterprise system has done a mighty fine job for our country, our customers, our owners and our employes.

Our accomplishments, I believe, are the natural result of dynamic business in a free society. When you put together the combination of a fundamental service concept, forward-looking objectives, dedicated hard-working employes, and basic research in a free competitive society with minimum government intervention, you get results.

In my opinion, no one is better equipped to preach the gospel of Free Enterprise than the men and women of telephony, and there is no more outstanding example of the American way of life than our 3,190 Independent telephone companies, most of which are represented here.

The carping critics who are downgrading our country are wrong. The unbiased evidence clearly proves that today the United States is first in military might — first in economic and industrial power — first in moral leadership. Only our lack of effort, lack of vision, or lack of intestinal fortitude can ever topple us to second place. Only the deluded fault-finders complain that America is on the skids. They are the fainthearts who wail that America is a second-rate power. Always their reaction to communist propaganda is to sell America short.

In three short centuries, under our free political and free economic system, we have grown to be the world's greatest power. No nation in history ever has duplicated — or even approached — our record of material and spiritual progress.

No people have ever given so much of their own substance to help less fortunate nations remove illiteracy, hunger and disease. America, alone of all nations, spent its blood and treasure to win two world wars and after each victory demanded no indemnities, no territorial grabs, no enslavement of conquered peoples and no domination of their governments.

Economic security — the dream of all past ages — is steadily coming true in Free Enterprise America where private capital, labor, and consumer all share the golden harvest.

The spark plug of this record progress has been freedom — freedom from tyranny of dictatorship — freedom in political action — freedom in economic enterprise — freedom that releases all the productive genius of the American people.

The American Free Enterprise System does not exploit the common man — it gives him an opportunity to make a better way of life for himself. This system has endured for 177 years and has brought us the greatest blessings the world has ever known.

But these are days of confusion on many fronts. We are admonished we should not ask what our country can do for us but rather what we can do for our country. Yet, the man who gave that sterling advice has in special messages to Congress shown he questions the validity of his own asserted philosophy. In plan after plan he has repeatedly proposed the country do more and more and more for the people who comprise the country. These plans pose serious problems!

### In The Days Ahead

WHAT about the future? No doubt, the future of the communication art holds wonders equally, perhaps surpassing, those which

**BELIEVE** it or not, USS Amertel telephone wire has been known to stretch enough under severe icing to actually touch the ground without breaking or disrupting service. And when the ice melted, the wire went back to almost its original stringing sag. All USS Tiger Brand Amertel telephone wires have strength to spare. In heavy loading areas you can span up to 200 feet with Amertel 85, 350 feet with Amertel 135, and 600 feet with Amertel 195. This means fewer poles, faster installation, and lower costs. Grade for grade, Amertel's voice transmission efficiency is the highest. The physical and electrical characteristics of Amertel 195 give it a transmission efficiency higher than any other galvanized steel telephone wire. The heavy zinc coating on Amertel gives greater corrosion resistance and lower maintenance costs. For your next job, check the advantages of using USS Tiger Brand Amertel. Write American Steel and Wire, Dept. **1422**, Rockefeller Building, Cleveland 13, Ohio.

*USS, Tiger Brand and Amertel are registered trademarks*

**American Steel and Wire**
**Division of**
**United States Steel**

Columbia-Geneva Steel Division, San Francisco, Pacific Coast Distributors
Tennessee Coal and Iron Division, Fairfield, Ala., Southern Distributors
United States Steel Export Company, Distributors Abroad

# CHURCHES perform a much needed service with telephone answering sets

FRANKLIN "DIAL OF DEVOTION" GA 5-6215 BLOOMINGTON

**The Methodist Church**

RICHARD W. DINSDALE, Minister
FRANKLIN, NEBRASKA

CHURCH OFFICE GA 5-6874

PARSONAGE GA 5-6883

3 June 61

Mr. Lyle Manchester
General Telephone Company
Madison, Nebraska

Dear Lyle:

The enclosed picture tells the story of the DIAL-OF-DEVOTION as I am putting the 700th Dial of Devotion Message on the Electronic Secretary in our Church Office - First Methodist Church, Franklin, Nebraska. The Peg Count shows nearly 21,000 calls have been made to the DIAL-OF-DEVOTION since it was initiated in Franklin in October of 1959.

One man who lost his wife was having a sleepless night...at 7 a.m. he called me: "Reverend," said his broken voice on the other end of the line, "I heard your voice this morning (about 3:50 a.m.) just as clear as if you was sitting in my room. Oh, it sure helped to hear you pray for me. I just was up and down all night. I finally hunted up the Sentinel (the weekly Franklin County paper) and found the number and called it." That was a typical call repeated by several during the night.

People I call on in the Hospital (where there are no telephone jacks located in the rooms) have told me they never miss a night in using the Dial-of-Devotion. Others have said: "That's our evening meal devotions. We sit down to the table together, one dials the GArden 5-6215 and we can all hear your voice leading us in meditation and prayer." In other homes where aged live, the loud speaker on the telephone helps a hard-of-hearing lady to have the Devotional prayer.

The enclosed March 7th message was taped by one of my visiting ministers from Minden. He spoke to the youth Sunday evening. They asked for a copy of his original paraphrase of Psalm 23. He put it on the DIAL-OF-DEVOTION. The High School youth called the message all day and evening Monday. The Peg Count showed more than 120 calls that day.

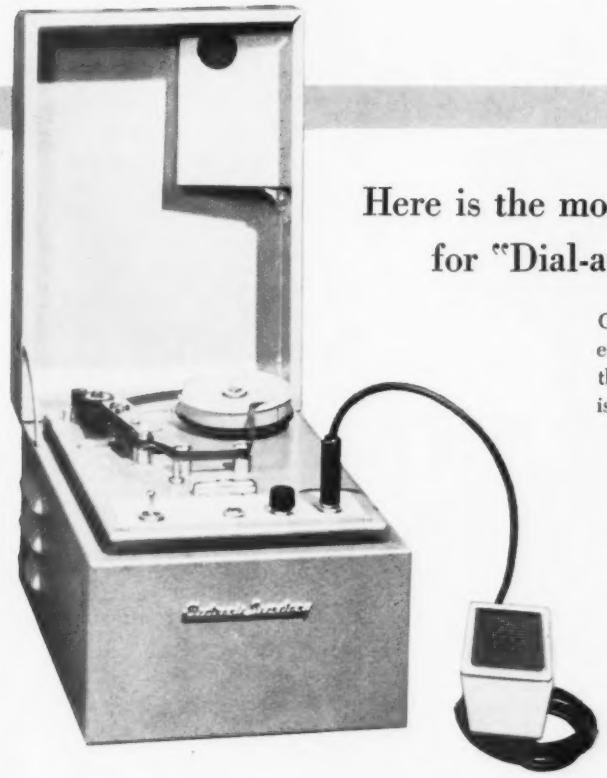
I followed the plan of pointing the Saturday message to Teachers, using a list of the International Sunday School Lesson each Sunday and various meditations and prayers each of the other days. I change it every 24 hours and sometimes oftener. When a prominent person of the community is being buried, that day the Dial-of-Devotion carries a prayer inbehalf of the bereaved family. Little children as well as shut-in members listen regularly.

Sincerely,

R W Dinsdale

***Ask your telephone company for more details***

# ELECTRONIC SECRETARY®



## Here is the model used by Churchmen for "Dial-a-Prayer" messages

Clergymen of all denominations are offering prayers and inspirational help to their parishioners via the telephone. Dial-a-Prayer (or Dial-a-Devotion) is growing in every state from Maine to California.

### HERE'S HOW IT WORKS

A pastor records a one-minute message on an Electronic Secretary Answer Only model. The message, inspirational in character, may contain a Biblical quotation, words of meditation or a prayer. Changed daily, it is offered as a community service for those who need spiritual or emotional help. And how the public responds! Day and night, calls are received from the aged, sick and shut-ins, and others who seek uplift or guidance.

**A proof of the testimonial letter reproduced on the opposite page, will be mailed to you shortly. Show it to religious leaders, church auxiliaries and undertakers in your territory.**

*For more information, check with your distributor listed below.*

***Electronic Secretary Industries, Inc., Subsidiary of GENERAL TELEPHONE & ELECTRONICS***

GENERAL SYSTEM

***Distributed by***

**AUTOMATIC ELECTRIC SALES CORPORATION**
400 North Wolf Road — Northlake, Illinois

**LEICH SALES CORPORATION**
427 West Randolph St. — Chicago 6, Illinois

# VERSATILE TRUCK BODY

**Fits any standard ½-ton cab and chassis with "CA" dimension "39-43"; permits greater vision, better load distribution, yet affords desired compartmentation and flexibility. Can be used for station installation, station repair (including part time cable repair) and combination work.**

SU 76 TRUCK BODY

**STEELWELD EQUIPMENT CO. INC.**

*Manufacturers and Distributors*

**St. Clair, Missouri**

# CONDEX* MULTIPLE CONCRETE CONDUIT

**Special fittings — miters — short lengths — expanded web sections available, also adapters to claytile, transite and fiber duct.**

9 DUCT FORMATION ON JOB SITE

American Concrete Pipe Co., Sub. of Am. Pipe and Construction Co., 2025 S. 7th St., Phoenix, Ariz. Tel: AL 2-7566
American Pipe and Construction Co., 4635 Firestone Blvd., Southgate, Calif. Tel: LOrain 4-2511
American Pipe and Construction Co., 101 Aiguire Rd., Hayward, Calif. Tel: JEfferson 7-2072
American Pipe and Construction Co., 518 N.E. Columbia Blvd., Portland, Ore. Tel: BUtler 5-2531
Concrete Conduit Corp., 130-01 Northern Blvd., Corona N. Y. Tel: ILlinois 7-1515
Chicago Pre-Cast Products Corp., 29W629 North Aurora Rd., Naperville, Ill. Tel: ELmwood 5-2700—2701
Denver Concrete Products Co., 5020 Marshal, Arvada, Colorado. Tel: HA 2-4202
Eastern Pre-Cast Corporation, 675 Main St., Tullytown, Pa. Tel: Windsor 9-3750
Elmore Concrete Products Co., Division of North Star Concrete Co., Elmore, Minn. Tel: ELmore 52
J. E. Evans Concrete Products Inc., Cleveland, Ohio. Home Office: Indianapolis, Ind. Tel: WAlnut 5-5301
J. E. Evans Concrete Products Inc., Shelbyville, Ind. Tel: WAlnut 5-5301
Neff Concrete Products Co., 711 Section St., Danville, Ill. Tel: Danville 1016
PRE-CON Limited, Oronda Rd., Brampton, Ontario, Canada. Tel: HUdson 1-3492 (Toronto)
T.E.L. Pre-Cast Products Corp., 1 Industrial Ave., Edgewater, Florida. Tel: GArden 8-9881
Utah Concrete Pipe Co., 379—17th St., Ogden, Utah. Tel: EXport 9-1171
For information regarding CONDEX* Multiple-Duct Concrete Conduit, call or write your nearest local producer, or the parent company.

Registered Trademark

CONDEX

**GAGNE ENTERPRISES, INC.**
29W 629 NORTH AURORA ROAD
NAPERVILLE, ILLINOIS
ELS 2700-2701


have already entered the pattern of existence.

Apparently our industry is destined to grow as long as the United States grows; — certainly it will continue to grow as long as individuals and groups, through improved communications, find it possible to increase production and sales, leisure and wages, profits and the pleasantries of life.

The future can be even more wonderful than the present, if we don't betray freedom. If we don't pull the shut-off switch on the generative force of our marvelous growth, the best years of our lives and of the telephone industry can be — not behind — but *ahead.* — *Adapted from a paper presented by Mr. Pearce at USITA's* 1961 *Convention.*

## "Buried Service"

*(Continued from page 79)*

such a terminal. This layout and type of terminal would only be used where it's not practical to install a rear property line system using pedestal terminals.

We use conventional alpeth PIC distribution cable of the same type normally used for aerial distribution except in gopher territory, where gopher tape protected alpeth cable is used. In view of the frequency with which the cable is looped at terminals, real care should be used to prevent damage to the sheath and the possibility of moisture entering at a later date.

We normally use a two-pair service wire. The added cost of the second pair is nominal, but the cost of later reinforcement, if a second line is later required, would be substantial. Note, it has a spiral aluminum shield which should be bonded to a ground at the customer's premise and to the cable shield at the terminal.

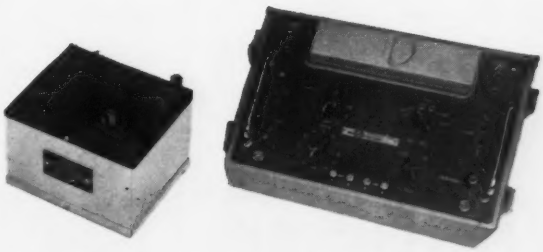
For economy, a simple terminating device is appropriate at the premise as a junction between the service wire inside wires. This would be a fuseless protector, if the system is exposed, or a simple terminal block if the system is entirely unexposed. If the layout calls for a cable along the rear of each line of houses and looped through a terminal on each

# AIRTRONICS DEPENDABLE PRODUCTS FOR MODERN TELEPHONY

AIRTRONICS Far-end Terminating Set, designed to be used in conjunction with the Model 20B Test Hybrid, supplies the Far-end terminations required for return loss and singing-point tests.

Generally, two precision networks, 115H and 115AL cover the standard cable layouts in exchange plant, (the 115H covering 19 and 22 gauge H88 facilities).

The Far-end Terminating Set consists of a precision network, network build-out decades, selector switch and jacks, and binding posts to give flexible access to the components.



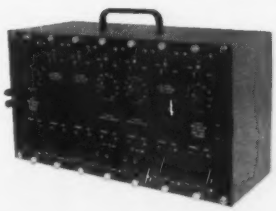
AIRTRONICS new multi-purpose, Portable Test Hybrid Set, Model 20B, makes acceptance, evaluation, and capacity balance tests easier, faster . . . locates cable opens accurately . . . accommodates standard networks. Either Singing-Point or Return Loss techniques can be applied. Accessories include external decade capacitor and variable resistor for use in locating opens, for compromise net, etc. Plug-in dial is also available.

## Other Airtronic Products

- Precision Networks WE 115 type
- Build Out and Terminating Set
- Program Equalizers
- New — New Transmission Measuring Set

Write for complete details

AIRTRONICS Pulse Meter is compact, easily carried, and plugs into the nearest 115 volt, 60 cycle ac wall outlet. Developed by telephone men FOR telephone men, the new pulse meter and power supply measures dial pulses from 0 to 15 pulses per second and percent make from 0 to 100 percent. It will accept loop, ground, battery, carrier, and polar-duplex pulses. Simple in operation, it can be easily carried and used at the test board, the telephone instrument repair bench — any place in the telephone exchange. For that matter, it can easily be moved to the actual subscriber instrument if the need arises. As an added bonus, the PMVPS-1 also gives you a dc power supply continuously variable from 0 to 300 volts. Use it to check transistor circuits, vacuum tube circuits, as a standby power supply — the sky is the limit! Best of all, you will be surprised that so much can be purchased for such a low price!



AIRTRONICS standard Artificial Lines accurately simulate a loaded or non-loaded cable pair of any desired length — from 600 to 39,600 feet.* Multi-position switches afford instant control over total length or load section lengths, so that coil spacings may be set to better than 1%, or as much as 10%. Common irregularities such as bridged taps, mixed loading or coils omitted can be introduced in a moment.

*Available with plug-in units for either #22 or #24 gauge cable, or mixed 22 and 24 gauge. Other commonly used gauges available on special order.

*another product FIRST from*

AIRTRONICS INTERNATIONAL CORPORATION

P.O. Box 8576, Fort Lauderdale, Florida 6900 West Road 84

HOW TO SELL MORE
EXTENSIONS
Also
• BUSINESS SERVICES
• YELLOW PAGE ADS
And All Other
Profitable "EXTRAS"

When you're out to build revenue you have to be just as sales minded as any other businessman. And you will need all of the help you can get. The TELEPHONE ADVERTISING INSTITUTE service offers you the most effective low cost way of reaching more people with your sales story.

Today the primary concern of our advertising and public relations service is helping to build revenue. Every phase of our service — hard hitting newspaper ads — colorful posters and cards — bill inserts — radio spots dwell heavily on promoting sales.

And our program is also broad enough to include advertising help on service problems such as party line.

We are in our 18th year of service under the supervision of the U.S.I.T.A. Advertising Committee.

Samples of our material are available to you free on request. Study the quality. Check the low subscription rates. You won't find a bigger bargain in business and good will building today.

TELEPHONE
ADVERTISING INSTITUTE
205 North LaSalle Street
Chicago 1 CE 6-0870

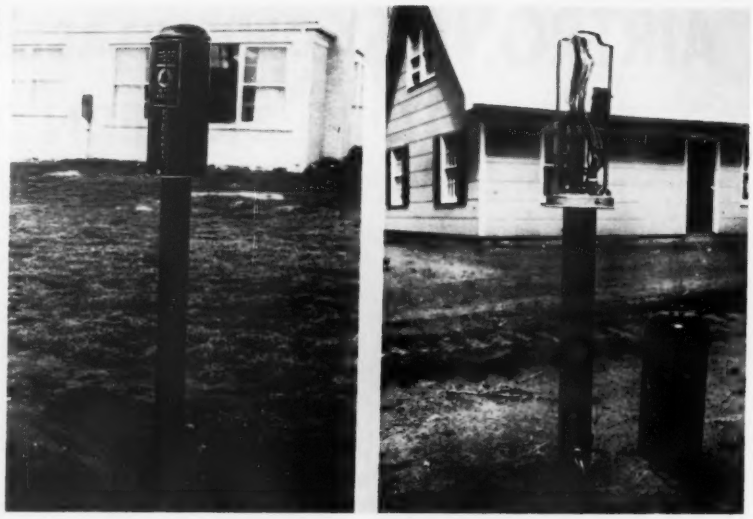



**FIGURE 14: — Typical pedestal terminals of current design.**

base, a terminating box is not required.

### Construction Methods

AND NOW, as to the use of these tools and materials. Determination as to whether trenching and/or plowing is optimum in a given situation depends on a variety of local conditions. Wherever plowing is practical, it's obviously the least expensive method of getting cable and service wires into the ground.

**FIGURE 15: — Terminal mounted on foundation wall of house.**

**FIGURE 16: — Two-pair service wire has spiral aluminum shield which should be bonded to a ground at the customer's premise and to cable shield at the terminal.**

If the distribution cable is to be plowed, terminal locations should be determined in advance and a slack loop of proper length established at each terminal point. Where the service wire is to be plowed, it's frequently desirable to use a trencher to dig a "start pit" immediately adjacent to the foundations of each house, so the plow can start at full depth.

If the service loops are to be plowed and the distribution cable trenched, it's usually desirable to plow in the service loops first, leaving an adequate coil above ground at the location where the service wire meets the distribution cable trench. As the distribution cable trench is completed, the previously plowed service wires can be laid in the trench

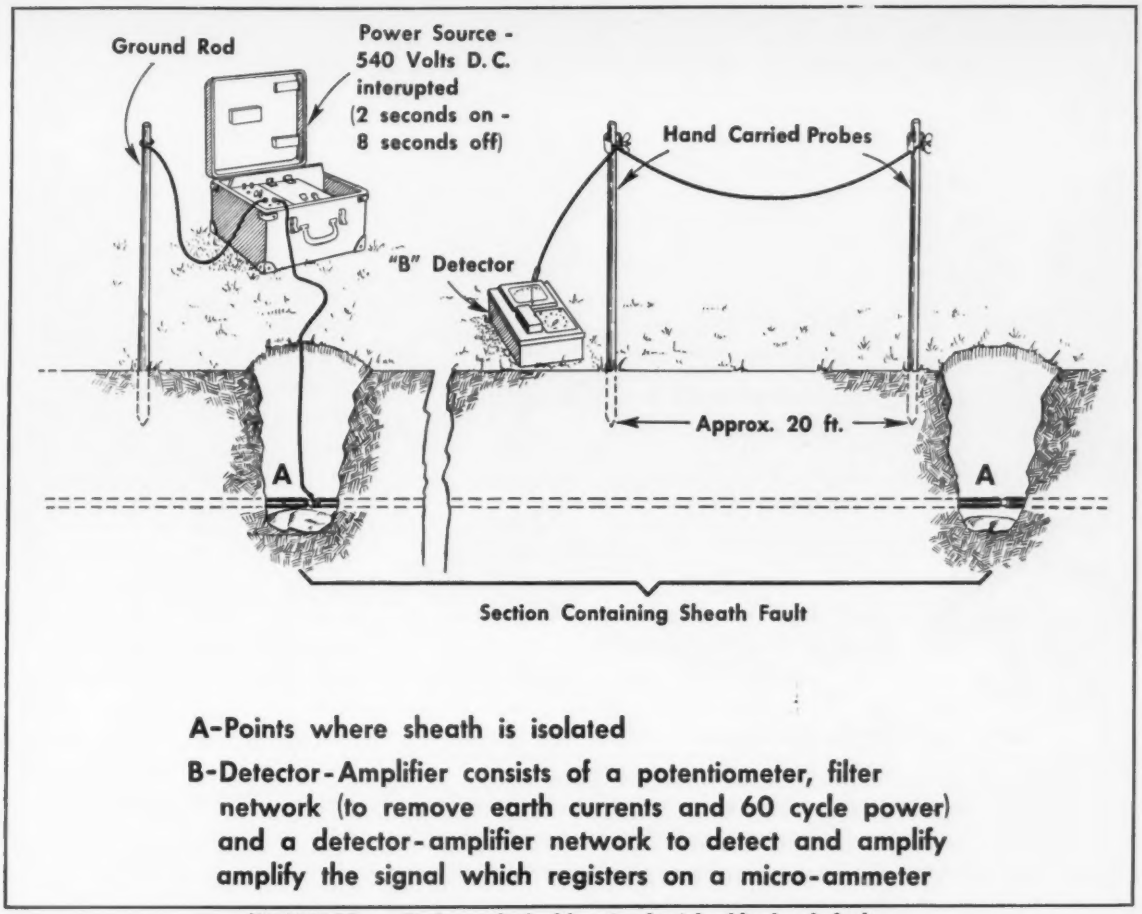

Ground Rod
Power Source - 540 Volts D.C. interupted (2 seconds on - 8 seconds off)
Hand Carried Probes
"B" Detector
Approx. 20 ft.
A
A
Section Containing Sheath Fault
A-Points where sheath is isolated
B-Detector-Amplifier consists of a potentiometer, filter network (to remove earth currents and 60 cycle power) and a detector-amplifier network to detect and amplify amplify the signal which registers on a micro-ammeter

FIGURE 17: — Probe method of locating burial cable sheath faults.

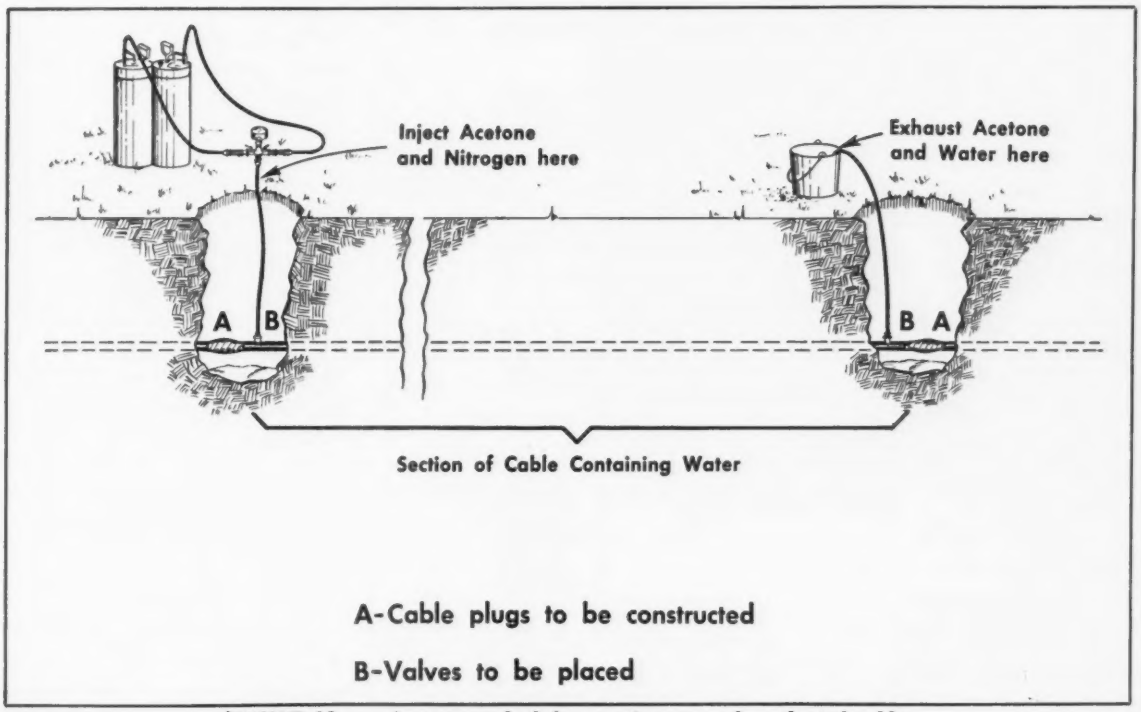



FIGURE 18: — Acetone method for purging water from buried cable.

## GENERAL MACHINE PRODUCTS COMPANY, INC.

**Old Lincoln Highway at Pa. Turnpike, Trevose, Pa.**

C-R POWER REEL

GMPCo

AERIAL TENTS
CABLE BENDERS
CABLE BLOCKS
CABLE LASHERS
COAXIAL CABLE TOOLS
LASHING WIRE
CLAMPS AND GRIPS
PORTABLE & POWER REELS

PRESSURE TESTING KIT

SLACK PULLER

COMPOUND

CABLE FEEDER

Distributed by GraybaR ELECTRIC COMPANY

B, C, D, E, & G CABLE LASHERS

**Special Purpose Tools To Specifications — Catalog on Request**

**Over 600 various items of Line Construction Tools, Maintenance & Pressure-Testing Equipment in stock for immediate shipment**



*This is not and is under no circumstances to be construed as an offer to sell, or as an offer to buy, or as a solicitation of an offer to buy, any of the securities herein mentioned. The offering is made only by the Prospectus.*

September 20, 1961

250,000 Shares

# Telephones, Inc.

Common Stock

Price $8 per share

*Copies of the Prospectus may be obtained in any State only from such dealers participating in this issue, including the undersigned, as may legally offer these Securities under the securities laws of such State.*

Hayden, Stone & Co. — McCormick & Co.

A. C. Allyn and Company Incorporated — Bache & Co. — Bear, Stearns & Co.

Equitable Securities Corporation — Lee Higginson Corporation

F. S. Moseley & Co. — Shearson, Hammill & Co. — Shields & Company Incorporated

Bacon, Whipple & Co. — Blunt Ellis & Simmons — H. M. Byllesby and Company (Incorporated)

McDonnell & Co. Incorporated — Bateman, Eichler & Co. — Crowell, Weedon & Co.

Cruttenden, Podesta & Co. — Hallowell, Sulzberger, Jenks, Kirkland & Co.

Jones, Kreeger & Co. — Reinholdt & Gardner — Stifel, Nicolaus & Company Incorporated

J. C. Wheat & Co. — Beecroft, Cole & Co. — Coburn & Middlebrook, Incorporated

Eppler, Guerin & Turner, Inc. — Freehling, Meyerhoff & Co.

Lowell, Murphy & Co. — Moore, Leonard & Lynch — H. O. Peet & Co.

Quail & Co., Inc. Incorporated — Straus, Blosser & McDowell


to the serving terminal.

If it hasn't been possible to place cable (or a section of single duct conduit) under all street crossings before they are paved, the pipe pusher is invaluable. It should be recognized that the pipe pusher is only used to make a hole through the ground — A section of conduit isn't required here. In fact, the cable can be pulled directly through the hole formed by the push pipe, as the push pipe is pulled back by the pipe pusher.

Crew organization and job planning together with a selection of optimum types of trenching and/or plowing equipment is the answer to an economical job. This means proficiency in these functions must be developed by the crews before an economical job can be expected.

### Problems of Maintenance

BEFORE considering detailed maintenance problems of buried distribution systems, we might point out certain fundamental characteristics of these systems and the materials involved.

PIC cable has outstanding advantages for buried use. It also has certain disadvantages which should be recognized to minimize their consequences.

If sheath defects are introduced through careless or faulty construction work, water can enter the core at a later date. Because of its loose core and the fact that the polyethylene conductor insulation won't swell when exposed to moisture, water can run for considerable distances from the point of entry in buried PIC cable before it meets adjacent conductor defects that would make the presence of water apparent. Conversely, a large amount of water in a buried PIC cable may only affect a few pairs, where any appreciable amount of moisture in a paper or pulp cable will probably cause a complete failure of all pairs.

For these reasons, we favor designing buried distribution systems using all above-ground terminals and splices to sectionalize the system. If for any reason water enters such a system, the affected section will be confined necessarily between adjacent termin-

# REACH UP & DOWN ALL AROUND

The Little Guy

## "Sky-Master"®

### HYDRAULIC AERIAL BEAM

Now, crewmen can safely work between telephone and power lines, around private property or over parked and moving cars.

***Check These Exclusive "Little Guy" Features:***

- Insulated Spirex* outer beam and molded fiberglass basket provide protection from "hot" lines, and complete isolation for the workman in the basket.
- Ideal for transformer re-fusing . . . insulator inspection . . . mid-span telephone drops . . . maintenance of cable lines, street lights and signs . . . tree trimming . . . and other hard to reach aerial work.
- Built-in stability eliminates all outriggers.
- Outer beam swings 200°, inner beam 110° and mast rotates 370° in either direction . . . continuously, if desired.
- Three models with ground-to-basket-floor heights of 30', 32', and 35'.
- For mounting on light and medium duty trucks.
- Slave-Master hydraulic controls at basket and on mast.

*Filament wound, resin-bonded, non-conductive fiberglass

For more facts on how to save time and money with the Little Guy ABS-35 Sky-Master, contact us or your Powers-American field representative today.

**McCABE-POWERS BODY COMPANY**

**5900 N. BROADWAY • ST. LOUIS 15, MISSOURI**

12121 Los Nietos Road
Santa Fe Springs, California

•

5525 S. E. 28th Avenue
Portland 2, Oregon

# WESTERN ELECTRIC AND

"SNOW WHITES" are girls at Western Electric's new Kansas City Works who work in super-clean conditions to produce miniature electronic products for the Bell Telephone System to the most exacting specifications. The girls you see are assembling mounts for electron tubes which will be used in Bell System telephone amplifiers.

# KANSAS CITY

**Known as the "Gateway to the Southwest" — fast-growing Kansas City offered an ideal location for Western Electric's new manufacturing plant, where electronic parts and equipment are now being manufactured for the Bell Telephone System.**

An electronically-triggered dynamite explosion signalled the start of construction on April 28th, 1960, at the 340-acre site in Lee's Summit, just outside Kansas City, Missouri.

Eventually, there will be some 5000 employees at the new plant, receiving an estimated payroll of $25 million annually — all playing important roles in the production of a wide variety of communications products for the Bell Telephone System. These include transistors, electronic tubes, switchboard lamps, and complex carrier equipment capable of transmitting a TV program and hundreds of telephone calls over a single channel.

Western Electric has been warmly welcomed by our neighbors in the Kansas City area. In return, it's our hope that the new jobs we are creating here, the resulting new business for local merchants and suppliers, and the taxes we pay will contribute to the future progress of this vital area.

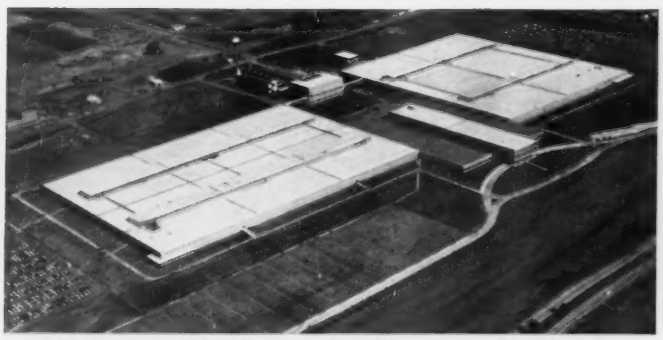
A WARM WELCOME was expressed by Roy Roberts, President and General Manager of the Kansas City Star, when he said, "Kansas Citians are delighted to have W.E. expand their operations here. Western's employees are already proving that they're good citizens as well as good workers."

**Besides Kansas City, Western Electric has 12 other principal manufacturing locations, where we make hundreds of different products for the Bell System and for the Government, mainly for defense. Last year we purchased over a billion dollars' worth of raw materials, products and services from our nearly 40,000 suppliers located in every State of the Union. Of these, 90% are "small businesses." The things we make and buy are distributed to the Bell Telephone companies through Western Electric distribution centers in 33 cities.**

Western Electric

MANUFACTURING AND SUPPLY UNIT OF THE BELL SYSTEM

AUTOMATIC FEATURES of a copper coating machine are pointed out by John Hoover, Vice President of the Summit Engineering Co., to L. G. Swenson, a visiting W.E. buyer. Summit is one of many local businesses that supply parts, tools, and machinery to the Kansas City manufacturing plant.



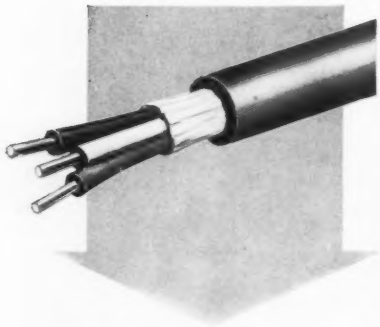
OVER 30 ACRES of well-organized working areas are housed in three buildings at Western Electric's new Kansas City Works. The building in the center is for administration and service — the other two for manufacturing electronic communications equipment for the Bell System.

ON STAGE at Kansas City's Starlight Theatre are Western Electric training leader Lou Wells and his family. Lou, like many other employees at W.E., is active in community life. Above, set and lighting designer Phillipe de Rosier explains his work to the Wellses—Lou, wife Flo, Susan, Randy, and Debbie.

SUPERIOR

INSIDE-OUTSIDE

STATION WIRE



Superior IO wire was designed to lead a triple life. Use it in exposed outside locations; use it for inside positions; use it as a combined inside-outside wire.

Conductor insulation and outer jacket are of rugged, all-weather polyvinyl chloride, which provides excellent resistance to abrasion, oil, alkalies, and most solvents.

Economical and efficient, Superior IO wire is available with 2, 3 and 4 conductors, 22 AWG.

*For complete details, write*

SUPERIOR CABLE

SUPERIOR CABLE CORPORATION
HICKORY, NORTH CAROLINA

3580


als and/or splice points.

If it is found a sheath defect is in any section, the defect can be located by using the intermittent dc probe method with amplifier. The fundamental layout of such a system is illustrated by *Figure* 17.

Note the shield is isolated from ground at each side of the sheath defect. An intermittent 540 volt dc current is impressed between the shield and ground at one end. This establishes a field from shield through the defect to ground and back to the battery through the ground. Two employes using probes about 10 ft. apart explore the route of the cable. The two probe tips are connected through an amplifier to a galvanometer, both which are carried by one of the employes.

A field in one direction will be detected in increasing volume as the sheath defect is approached. Immediately over the sheath defect, the field will become zero and beyond it will reverse in direction. We've found sheath defects with a leakage to ground of as low as 10 megohms can readily be detected by this method within an accuracy of about a foot.

Physical water in a buried PIC cable will usually affect only a few pairs, making it possible in most instances to immediately restore service by cutting the loop to unaffected pairs. Water shouldn't be left in the cable indefinitely due to electrolytic action brought about by standing potential on working pairs. This means water must be expelled in a reasonable period. We have found this can be done by the method illustrated by *Figure* 18. Note plugs have been installed on each side of the wet section of the cable. Valves are constructed just inside each of the plugs. As much water as possible is first forced out, using compressed nitrogen at about 20 lbs. input pressure. The nitrogen won't expel all water.

**FIGURE 20: — Example of terminal where poor housekeeping was allowed to develop. With this type of workmanship, service will suffer, and eventually a costly job of rearranging will be necessary.**

**FIGURE 19: — Example of terminal that has experienced substantial turnover but which, by virtue of good housekeeping, is economical to work in and assures reliable service.**

So acetone is injected under nitrogen pressure and exhausted at the valve at the far end of the section. After it's determined that the expelled acetone is free of water (this can be done by a simple test), nitrogen is used to expel and evaporate the remaining pure acetone.

This is practical, since acetone is about 50 times as volatile as water and can be evaporated by the purging nitrogen.

It's imperative, when using this method, to recognize that acetone is highly combustible. Steps must be taken to safely dispose of exhausted acetone and prevent any possibility of ignition of the acetone vapors at either the input or output points in the cable section being purged.

One of the principal *potential* problems with underground distribution systems has to do with housekeeping in the terminal. I say "potential" because with proper craft training

# 19 SPACE-SAVING REPEATER PLUG-INS IN THIS CAN!

(typical plug-in, shown actual size)

| | |
|---|---|
| 447B | AMPLIFIER, REPEATER |
| 450B | AMPLIFIER, REPEATER |
| 453B | AMPLIFIER, REPEATER |
| 455B | AMPLIFIER, REPEATER |
| 457B | AMPLIFIER, REPEATER |
| 460A | AMPLIFIER, COMPRESSOR |
| 461A | AMPLIFIER, POWER |
| 12912 | EQUALIZER |
| 13530A | COMPROMISE NETWORK |
| 13531 | NETWORK H88 |
| 13532 | NETWORK NON-LOADED |
| 13533A | NETWORK |
| 13594 | RELAY ASSEMBLY |
| 13738 | ATTENUATOR |
| 13777A | PAD ADAPTOR |
| 13778A | PAD CONTROL RELAY |
| 13806A | ATTENUATOR |
| 13817A | LOOP BACK RELAY |
| 13826A | IDLE CIRCUIT DISABLER |

**Compact plug-ins!** If space is a problem—and it usually is with subscriber demands and new types of services growing daily—call on Altec. You'll save space, 3 to 1 over usual equipment. You'll also solve difficult transmission situations and improve services at the same time. Altec transistorized plug-in repeaters and associated equipment offer power and space economy, minimal heat generation, simple installation. 130 v supply is not required.

These reliable Altec products and a wide line of associated Altec transformers, power supplies, mounting panels, accessories are available for speedy delivery, normally from stock. For technical details and specifications, write for complete catalog, Number AL-1600-1, Dept. TE-10.

ALTEC LANSING CORPORATION

© 1961 Altec Lansing Corporation

*A Subsidiary of Ling-Temco-Vought, Inc.*

**ALTEC LANSING CORPORATION**

1515 South Manchester Ave., Anaheim, Calif.
NEW YORK • LOS ANGELES

---

## Cordless Operation . . .

The most rapid, efficient means of operation yet devised. As always, efficiency means economy.

# USI TYPE 40A PABX

Unsurpassed for features heretofore considered optional. Compact desk model or impressive floor mounted switchboard equally available.

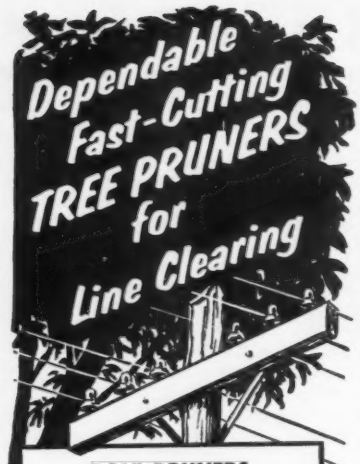
## Keysender . . .

Many times faster than conventional dial. Pulses toward both PABX stations and central office in a flash! And . . . time saved is money earned.

Distributed by Graybar

USI CORP.

**UNITED STATES INSTRUMENT CORP.,** CHARLOTTESVILLE, VIRGINIA




**POLE PRUNERS**

**No. 11**
Cuts up to 1" branches. A strong, durable, easy cutting 18 foot tree pruning unit. Spruce extension poles in 6 foot sections, with telescoping aluminum joints.

**No. 12**
Cuts up to 1½" branches. Pruner head is malleable iron casting, husky, unbreakable. Smooth, easy cutting action.

**LOPPING SHEARS**

Heavy duty, fast easy cutting loppers designed for utility use.

**No. 75**
Compound lever cutting action, smoothly slices through 1¾" to 2" branches.

**Nos. 525, 530**
The famous "Tiffany" pattern lopping shears 25" and 30" models. Cut branches up to 1¾".

**PRUNING SAWS**

**No. 1826**
26" blade of Sandvik Swedish steel especially designed for true work. For those spots where a chain saw can't operate.

*Send for literature and additional information on pruning tools of all types.*

Quality Tools
SEYMOUR SMITH
Since 1850

**SEYMOUR SMITH & SON, INC.**
Oakville, Connecticut, U. S. A.

*Sales Representative*
JOHN H. GRAHAM & CO. INC.
105 Duane Street, New York 8, New York


and administration, it has been demonstrated that no problem will exist. If the craftsmen who conduct station installation and change work at these terminals aren't meticulous, service and subsequent expense will suffer. *Figure* 19 shows an actual example of a terminal that has experienced substantial station turnover, but by virtue of good housekeeping is economical to work in and assures reliable service.

*Figure* 20 is an example of a terminal where poor housekeeping was allowed to develop. It's self-evident that service couldn't help but suffer with this type of workmanship; eventually a costly job of rearranging will be necessary.

### Conclusions

BURIED DISTRIBUTION systems and techniques are in their infancy, compared with conventional aerial plant which has undergone refinement for more than three-quarters of a century.

It's already apparent that, at least where conditions are favorable, buried distribution systems can be installed at a lesser first cost than comparable aerial systems and produce a link in the subscriber loop plant more trouble-free and less costly to maintain than conventional aerial plant.

It must be recognized that a better planning job and possibly more meticulous training and supervision is required to fully capitalize on the potential advantages of buried plant.

We can be reasonably sure that the public will be increasingly insistent that all utility facilities in urban areas be placed underground. We should become proficient before public pressure becomes insistent.

Buried urban construction introduces problems today — but it has great potentials in capital and expense dollar economy, as well as improved service. It only remains for us to learn how to take full advantage of that potential. — *Mr. Chilberg presented this paper at the* 1961 *USITA Plant Conference.*

## "CDO PLANT MAINTENANCE"

*(Continued from page 62)*

Each pen measures the pulses, cycles or changes in a circuit. At the main dial office, it's useful in the analysis of the pulses and inter-digital timing of the register-senders. In the CDO, usually a non-recording DDD office, it's useful in analysis of the line identifier.

If you are now using the pen recorder or plan to use it in the future, I have a suggestion to save time and money. The tape furnished is an expensive charted type tape. We have found the instrument works just as well with adding machine tape. The only problem is measurement of time on the tape. By connecting the second pen of the recorder to our 60-cycle, 110-volt a. c. supply, we can use the 60 cycles/second as a time reference.

### Automatic Line Routine

AN ITEM which goes well with a CDO dial equipment routine is the automatic line routiner. This unit can be purchased from most manufacturers for about $1,500. It is usually installed in the main office, but it can be set to routine the lines in the CDO offices also. It tests for loop leaks, leaks to ground and foreign battery, and prints this information on an adding machine type tape.

In my company we're planning to build our own portable line routiner. To my knowledge no such instrument meeting our specifications is available on the market. Our central office repairman will carry this routiner from office to office on his regular routine visits. He will quickly plug it in and start it automatically checking the outside lines. Information obtained will be turned over to the outside plant department which will dispatch a repairman to locate the faults.

The advantage of a portable line routiner is: It may be moved from main office to main office and from CDO to CDO, making it economically feasible to use in every office.

Many companies have a preventive maintenance program for their inside plant, but none for their outside plant. I'm sure your outside plant is just as liable to failure as the inside plant. Doesn't it stand to reason that we should have a planned P.M. program for outside plant?

Some people have asked me what kind of a P.M. program we can have for outside plant. Briefly, by various means we should periodically check the poles, cables, cable terminal and wiring, open wire, drops, station wiring and instruments. While checking the station wiring, it is a good idea to check a few of the new installations. By doing so, we can determine the quality of work turned out by each installer.

You'd probably be surprised at what an effective public relations tool it is to stop at a subscriber's home for a P.M. check. You may only install a new number card, but this gives the subscriber a feeling the company cares what kind of service it is giving. You also can integrate this with a merchandising program or a commercial survey. In small companies the commercial survey usually falls into the realm of the Plant or Engineering Department. So while making a P.M. check, it's an easy matter to make or bring the commercial survey up to date.

### Testing Equipment And Procedures

NOW that our automatic line routiner has indicated we have troubles before the customer is aware of them, let's discuss ways of locating those troubles.

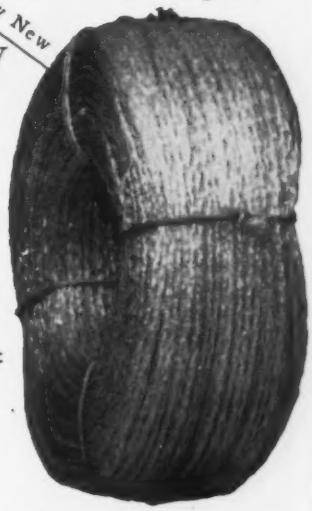
Trouble-shooting on the outside plant is a most difficult problem in the CDO. The repairman is on his own. He has no testboardman, wire chief or manager to help him. We must give him the best tools available to help him do his job as efficiently as possible.

An old saying comes to my mind. I believe it's applicable here — *"If you need a tool but don't purchase it, you pay for it but don't have it."*

Almost all CDO dial units have a wire chief's test circuit of some sort. We should see our outside plant re-


New New — New New — New New Write for Sample

A Revolutionary NEW LASHING MATERIAL



You'll be surprised at its Light Weight

You'll be amazed at its Strength

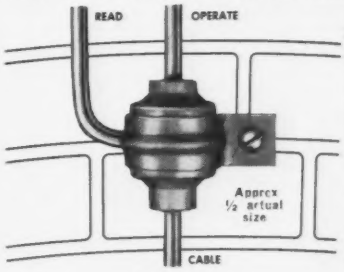
Cable Spinning Equipment Company

3100 Topeka Avenue

CE 2-7234 or CE 2-7235 Topeka, Kansas

G. W. DAHL • G. W. DAHL • G. W. DAHL • G. W. DAHL • G. W. DAHL

MINIATURE MOTOR VALVE FOR UNDERGROUND, PRESSURIZED CABLES!




Air opens buried valve . . . allows quick check of air pressurization or recharging of underground cable from the surface.

Developed in collaboration with Bell Telephone Laboratories, Inc., this compact, spring-loaded diaphragm valve is attached directly to buried cable at desired check point. OPERATE and READ tubings are led to convenient surface location where air checks and recharging can be accomplished with minimum effort.

When recharging cable, a pressure approximately 20 psig greater than that being added to cable through READ tube is applied through OPERATE tube to keep valve open. Entire valve is made of corrosion-resistant alloys, tin plated, for long, dependable service.

REQUEST Catalog T-1 for complete data on this valve and other Dahl pressure system valves for indicating and regulating air usage in continuous flow systems. G. W. Dahl Co., Inc., 30 Tupelo St., Bristol, R. I.

G. W. DAHL CO., INC.

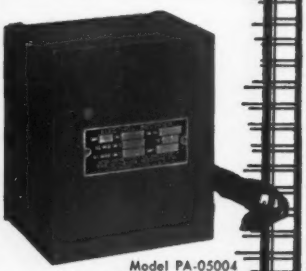
SPECIALISTS IN COMPACT VALVES AND CONTROLS

G. W. DAHL • G. W. DAHL • G. W. DAHL • G. W. DAHL • G. W. DAHL

**BE SU-RRR-E!**

**Make SCHAUER your source for dependable DC POWER!**

SCHAUER is recognized by the Telephone Industry throughout the world as a leading manufacturer of battery eliminators and battery chargers for almost every DC power requirement. You save with Schauer—on low first cost, low operating cost, and reliable service. See your Jobber or write for Bulletin No. 1470.



Model PA-05004
Schauer Battery Eliminator

***Here's a sure SCHAUER power source for the operator's circuit on magneto switchboards***

Schauer Type PA-05004 Battery Eliminator delivers constant, hum-free direct current to the operator's circuit. Equipped with relay for automatically transferring power to stand-by dry cells in the event of AC failure. Standard capacity is 4 volts DC at 0.5 amps. Steel case, for wall mounting is 5½"x6¼"x4".

Rectifier Division
**SCHAUER**
MANUFACTURING CORP.
4516 Alpine Ave., Cincinnati 42, O.


pairmen understand the use of these units. Other necessary test units for the outside plant repairman are: A good wide scale volt-ohmeter; a dial test set; and a direction-finding test set.

It's surprising to find a number of companies still don't provide their outside plant men with direction-finding test sets. This item has been produced by several manufacturers for many years, but for those of you unfamiliar with it, I'll describe it.

It's a lineman's test set with a magneto talking and ringing circuit. It also has a circuit which sends a tone out on the physical line when you crank the magneto.

If there is a short or ground on the line, the lineman places his line clips and clip-on exploring call to the line. He then listens in the receiver while he cranks the magneto.

If the trouble is in the direction of the exploring call from the test set, the lineman will hear the tone in his receiver. If the trouble is in the other direction, he won't hear a tone. Thus, he is able to determine the direction of the trouble without opening the circuit.

He also has a light which he looks

**FIGURE ONE: — Six Months Routine Check Sheet.**

Exchange ..... Starting Date .....

| Routine | April | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|
| Fill and Routine Battery | | | | | | |
| Dust Equipment Covers | | | | | | |
| Clean and Wax Floor | | | | | | |
| Record Traffic Meters | | | | | | |
| Start and Routine Stand-by Electric Plant | | | | | | |
| Check Distributing Frame | | | | | | |
| Test Finders — Seizure | | | | | | |
| Visually Inspect Wipers | | | | | | |
| Test Connectors | | | | | | |
| Test Rev. Call Switches | | | | | | |
| Test Trunks | | | | | | |
| Test Alarms | | | | | | |
| Test Tones | | | | | | |
| Test Ringing and Tone Transfer | | | | | | |
| Test Interrupter | | | | | | |
| Test Ringing Machine Output Frequency | | | | | | |
| Check Fire Extinguisher | | | | | | |
| Lubricate Finders | | | | | | |
| Lubricate Connectors | | | | | | |
| Lubricate Interrupter | | | | | | |
| Lubricate Minor Switches | | | | | | |
| Clean Banks | | | | | | |

**FIGURE TWO: — SERVICE EVALUATION.**

Exchange .....

Month ..... Total Main Stations 2,120

| Trouble Cause | | No. of Tickets | No. per 100 Main Stations |
|---|---|---|---|
| Trouble Cleared | TC | 101 | 4.8 |
| Open Wire | OW | 55 | 2.6 |
| Pole Line | PL | — | — |
| Drop | D | 24 | 1.1 |
| Station Equipment | SE | 31 | 1.5 |
| Receiver Off Hook | ROH | 16 | .8 |
| Central Office | CO | 15 | .7 |
| Cable | C | — | — |
| Fuses and Carbons | FC | 10 | .5 |
| Other | O | 2 | .1 |
| Total | | 254 | 12.1 |

NOTE: To determine the troubles per 100 main stations, multiply the troubles by 100 and divide by the number of stations.

# THANKS

to all of you
who stopped
in to see us
in Room 534 at the USITA Convention.
Not all of us could greet all of you,
but we want you to know that we're glad
you came and sorry if we missed you.

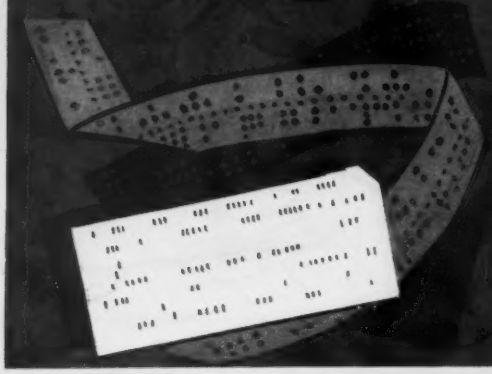
John Brown Cook
John Ingmanson
Charlie Cumpstone
Eddie Love
and all your
other friends
at Whitney Blake

WB WHITNEY BLAKE CO.

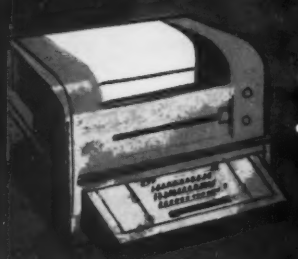
New Haven 14, Connecticut
Tel: CHestnut 8-5515 TWX: NH 84

# LENKURT TELECOMMUNICATIONS

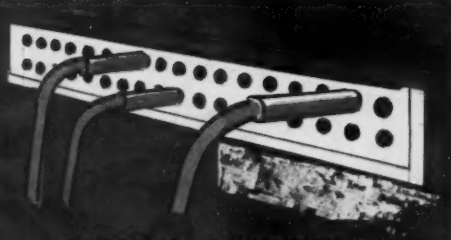
**MICROWAVE SYSTEMS**
- Video, Voice and Data
- Short and Long Hop
- Low and High Density



**DATA TRANSMISSION SYSTEMS**
- Frequency Shift—80 bits per second/per channel
- Quaternary FM to 3360 bits per second
- Transistorized



**CARRIER TELEGRAPH SYSTEMS**
- VF Telegraph
- Frequency-Shift Teletype
- Up to 100 WPM



**ACCESSORY EQUIPMENT**
- Test Equipment
- Compandors and AGC Amplifiers
- Patch Cords and Jack Fields
- Filters

**(ENGINEER, FURNISH AND INSTALL)**
- From System Planning and Engineering
- To Delivery and Installation
- To Turnkey Cut-Over

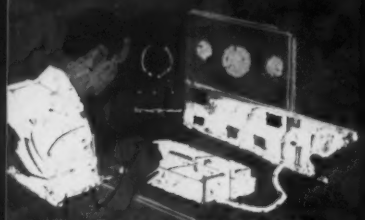
## The one source for all your transmission requirements

**Microwave—Open Wire—Cable**

In planning the extension or expansion of your circuits and services, it is worth knowing that Lenkurt Electric is equipped to deliver complete turnkey "packages" ready for cut-over. Beyond detailing your requirements, there is nothing either you or your employees need do. The responsibility,

Lenkurt Electric Co., Inc., San Carlos, Calif. Offices in Atlanta, Chicago, Dallas,

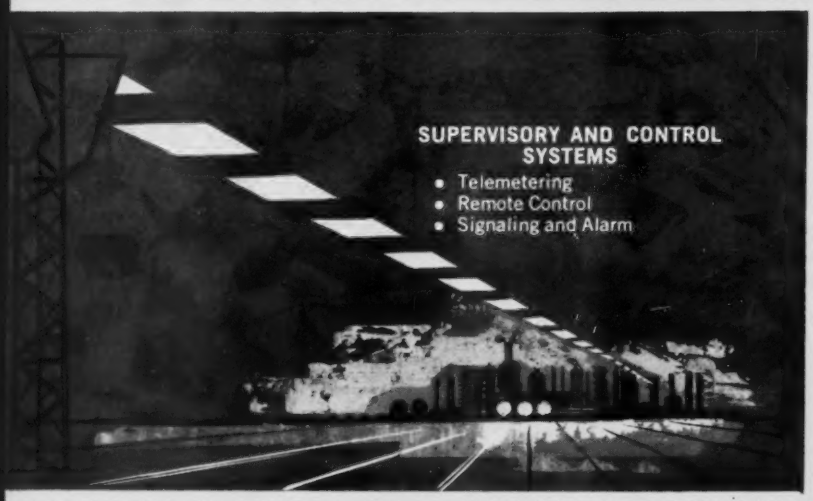
# SYSTEMS AND SERVICES



**REPAIR/REPLACEMENT**
- 24-hour Service
- Full stock of Reserve Units
- Customer Replacement Service

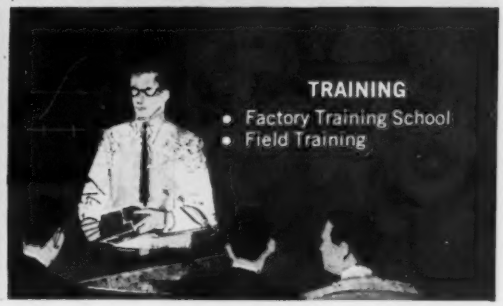
**TECHNICAL LITERATURE**
- Equipment Drawings and Specifications
- Customer Information Service
- Monthly Technical Supplements

**MOBILE TELEPHONE SYSTEMS**
- Manual and Dial
- Mobile and Urban stationary installations
- 35 mc., 150 mc. and 450 mc.



**SUPERVISORY AND CONTROL SYSTEMS**
- Telemetering
- Remote Control
- Signaling and Alarm

**CARRIER TELEPHONE SYSTEMS**
- For Open Wire, Cable and Radio
- Short and Long Haul; Exchange Trunk
- Up to 600 Channels



**TRAINING**
- Factory Training School
- Field Training

from start to finish, is entirely ours.

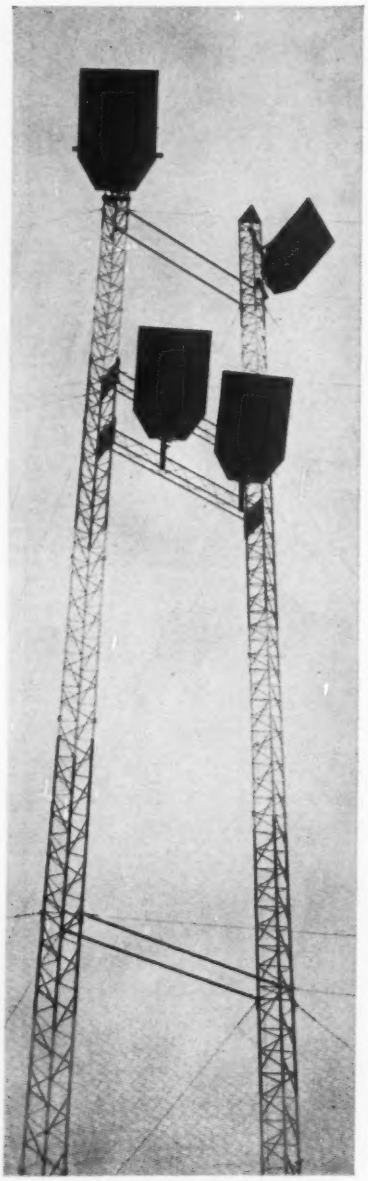
Or, if you wish to undertake your own installations, you'll find that there is no need to go beyond Lenkurt Electric as the source for the transmission equipment you need. If it is used by a telephone company, we have it.

## LENKURT ELECTRIC

Subsidiary of
GENERAL TELEPHONE & ELECTRONICS

Minneapolis, New York and San Carlos. — Specialists in VIDEO, VOICE and DATA TRANSMISSION

# ROHN MICRO-WAVE TOWERS



For your micro-wave tower requirements, get the advantages of advanced design, superior workmanship, competent engineering assistance, and complete erection service.

**FREE** *details gladly sent on request. ROHN Representatives world-wide.*

**ROHN** *Manufacturing Co.*
P.O. Box 2000
Peoria, Illinois

"Pioneer Manufacturers of Towers of All Kinds"


at while cranking the magneto. If it is bright, the trouble is close; if it is weak, the trouble is more distant. With a little practice, a lineman becomes an expert in using this set. It is a *must* for the CDO repairman.

### Service Evaluation

WITH our inside and outside plant routines set up and operating on schedule, we must be giving the best possible service. To be certain, we should continually evaluate this service. Here is a brief outline of one method:

(a) Faithfully write trouble tickets on all trouble reports, even though the trouble may have already been reported.

(b) When the trouble is cleared, classify the cause. The classification should then be placed on each ticket, such as: TC (for trouble cleared), D (for drop trouble), CO (for central office trouble), etc.

(c) At the end of each month, count the total tickets by exchanges and the tickets in each classification, and determine the number of complaints per 100 main stations. (*See Figure Two*) You can graph the results monthly and compare the data with others evaluating their services in this manner. If you've never evaluated your service, you may be surprised at the results.

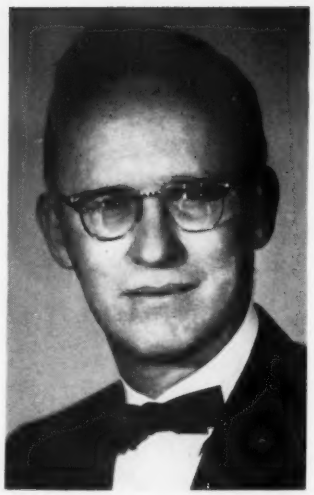
### Public Relations

NOW WE may be giving the best possible service. But if the subscriber doesn't know it, we're still not meeting our objective. The subscriber bases his feelings towards us on many things, but basically on the service we provide and the contacts we have with him.

As a rule, neither we nor our employes live in the CDO community. We don't own personal property there, spend our money there, or have social contacts with the subscriber. We must see our outside plant employes are our ambassadors of good will.

### Employe Relations

WE WILL do a much better maintenance job if our employes are well adjusted. Keeping a happy



**Author of this article, James M. Kirby, chief engineer, Oregon-Washington Tel. Co., Hood River, Ore.**

employe is most difficult in the CDO. The plant man in the main office is in and out during the day. We, their supervisors, talk with them, have lunch perhaps, instruct them and help them. In doing so we build a relationship with them.

On the other hand, our CDO plant men leave the first thing in the morning and don't return until quitting time or after. It is difficult to have any relationship with them. They have have a tendency to become frustrated and to pass this frustration on to the subscribers.

To avoid this, we should hold regularly scheduled instruction and discussion periods. We should meet them out in the field and help them with their problems.

### CDO Building

ANOTHER ambassador of good will in our CDO community should be our building. The CDO building is one seldom seen by the telephone company management.

For this reason, I believe we have a tendency to build the plainest possible building, let the weeds grow around it and forget it. We overlook the fact that the people who see it every day, whose community it is a part of, are our CDO subscribers and our potential subscribers.

Before writing this paper, I discussed CDO maintenance problems

with a friend of mine. He has a close relationship with many small telephone companies. I asked him to tell me honestly what improvements he felt they could make.

His comments were, "Frequently I find the door to the CDO building is ill fitting, allowing dust to sift in. The building is poorly heated and ventilated, making it cold in the winter and hot in the summer. It's poorly lighted and the blueprints filed in an apple box."

These conditions discourage the employes from doing their best work. For a very nominal expenditure, these conditions can be remedied and the CDO building made a pleasant place to work.

### The Cost

THE second part of our objective is to give this good service at the least possible cost to the subscriber and to earn a fair return on the investment.

One major cost of operating a CDO is that of transportation. Some of my company's CDO plants are located as far as 95 miles away from the main dial office. To combat this, we're using the economy line of trucks and cars. Our employes like them and they're cutting our costs.

Adding to our transportation costs is the problem of dispatching trouble reports to repairmen in the field. As an example, the repairman picks up his trouble report and drives to the distant CDO. He calls in frequently for trouble reports and makes a final call just before leaving for the trip back to the main office.

Just after his last call, the main office receives a trouble report but our repairman is now on his way home.

The obvious answer to this problem is the use of mobile radiotelephone. By using mobile radiotelephones, we'll not only improve our repair service, but will encourage our customers to use mobile radiotelephones in their business.

### Conclusion

IN summary, I believe to give the best possible service it's necessary for us to have a planned preven-

1

2

3

4

*Instant*
**Shelf-Ette®**

15 MINUTES . . . That's all it takes to convert an existing installation into an attractive, lighted Shelf-Ette.®

It's fast and easy to install. One person can do the job in 4 EASY STEPS.

1. **Remove the shelf.**
2. **Slip Shelf-Ette® over existing #144D backboard installation.**
3. **Remove two screws on top, and ceiling will hinge down, giving access to top mounting holes.**
4. **Replace shelf. Bracket attaches to bottom of shelf and against wall, holding bottom of Shelf-Ette® securely.**

And now you have a beautiful, lighted Shelf-Ette® . . . made of clear acrylic plastic and high-pressure laminated plastic, white speckled with gold sequins.

This Shelf-Ette,® the GP-4020, List 4, provides that certain "extra" that pay stations need. There's extra attractiveness, extra privacy for the user, plus extra ease in installing.

Write today for information about Gladwin's many products for the telephone industry.

MODEL GP-4020, List 4

**GLADWIN PLASTICS, INC.**
165 COURTLAND ST., N. E.
ATLANTA 3, GEORGIA - 525–5384
Area Code 404

1

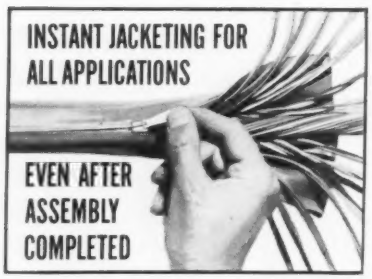
# SHIELD

**your cables from Radio Frequency Interference with ZIPPERTUBING...**

instant jacketing for all applications.

ZIPPERTUBING shields and jackets cables in a single, easy, economical operation. Available in a wide range of materials to meet extreme RFI and environmental conditions, including abrasion, extreme heat and cold.

Send for our free catalog and take advantage of our confidential consultation and design service.




PAT. AND PAT. APP. FOR

THE Zippertubing® CO.

Main Office and Plant:
13000 S. Broadway, Los Angeles 61, Cal. • FA 1-3901
Eastern Office and Warehouse:
470 U. S. Hwy. 46, S. Hackensack, N. J. • HU 7-6261

tive maintenance program inside and out. We must provide our employes with the best tools available to do the job. We must maintain excellent public and employe relations and continually evaluate our service.

If we're to operate at the lowest possible rates and earn a good return for our stockholders, we must be ever watchful for ways to cut our operating costs without sacrificing service.

The program of plant maintenance I've presented to you is no doubt elementary to some of you, but new to others. I feel my time and yours has been well spent, if I've convinced only one of you to organize a preventive maintenance program.

If you do this, I'm certain you'll not only give better service, but over the long haul will also save money for your company. *Mr. Kirby presented this paper at USITA's* 1961 *Plant Conference.*

## "The Traffic Department's Part"

***(Continued from page 59)***

*Management* in February, 1960. Using the letters that spell Diplomat, he enlarges on the subject: Speak *Distinctly; Identify* yourself; be *Prompt* to answer; *Learn* to handle impatient callers, etc.

The booklet also features:

(1) Article on "*Hold the Line on Out of Town Calls.*"

(2) Standard codes used by our operators. PBX operators appreciate knowing what we mean by OD — DA — NF —U Few — LW, and enjoy their work more when they understand and can work closely with us.

(3) If the board requires use of a headset, the illustrated page for proper use of the 52 AW set is included.

(4) A special page on how to properly report cases of trouble on a switchboard — to obtain the speediest repair service.

(5) A copy of our "Secrecy of Communications" sheet. We explain, our employes are so bound, they are free to treat it as they wish.

The booklet contains other items intended to show the customer how important his telephone service and his employes are to *his customers* and how the telephone company works to inform and help him.

After explaining the blue booklet, we went to the equipment room and talked with the installers to be sure *all* items included in our notice form would also be included at the cutover. Then a chat with the operator, answering questions and planning to give her training on the Friday preceding the cutover. We also plan the directory which must be printed and ready for each station user at cutover time.

Next I kept an appointment with a large PABX toll user who requested T&C on every call, so the monthly toll statement could be checked. How many here are familiar with TNI, "Trunk Number Identification?" It's simple and easy. Yet savings to the telephone company and the subscriber are tremendous. We have one large firm whose toll bills run into many thousands of dollars per month and who hired a full-time accountant to check toll charges and assign them to their proper departments.

I told the manager of his firm's saving in trunk usage as well as operator time in answering the T&C call-backs. There was no secret made of the savings to the telephone company in eliminating T&C charge requests.

After arranging to assign each of their rotary trunks (except the first one) to a different department using toll and then placing a sticker on the extension user's telephone to remind him what number to charge his tolls to, the operator was told of the procedure.

I gave him copies of a TNI toll bill to explain how it would look. TNI was complete. Within 10 days the manager called back to thank us for our fine service and the savings to his firm.

**Tuesday** — a different challenge, with three contacts to be made at hotels and motels at the request of our chief operators. Incorrect operating practices by newly hired hotel

employes were giving trouble to toll room operators.

These were cases where diplomacy had to be used to help these people, for we can offer but the subscriber does not have to accept our help. It is up to us to make the offer so attractive they are happy and grateful to have the training.

The fairly new procedure of connecting the customer to the distant city information for Address-Name calls has been accomplished by a personal telephone call or with an informative letter addressed to the firm: Attention: PBX Attendant.

**Wednesday** — a day of programing. This is the part of our work I enjoy most. For customers who feel there is something wrong with their telephone customer-employe contacts, we offer programs geared to their particular problems.

Sitting down with their management, we plan a schedule — a series of meetings — showing special films — using tape recorder programs — voice mirror — and distributing booklets, such as these, to each employe: (1) "What Every Telephone User Should Know"; (2) "Open the Door by Telephone"; and (3) "Marvel at Your Fingertips."

In this type of work the need to have people feel at home and relaxed during the meeting is absolutely necessary. After the film, tape or talk, we ask for questions on their problems. Here your skilled knowledge and tact must meet their actual personal problem with a workable solution. Gratifying results come from these programs, as management and employes accept our suggestions and put them into action.

**Thursday** — routine calls on our customers are important and must be handled daily, together with our other work, emergency calls, and the cutovers we encounter. At cutovers, the type of board determines whether you call back yearly, semi-yearly, quarterly or more often.

In a resort state such as Florida, some large hotels operate for only four or five months of the year, and capacity registration plus large conventions in town make closer supervision and advice helpful to the cus-


DATE_____

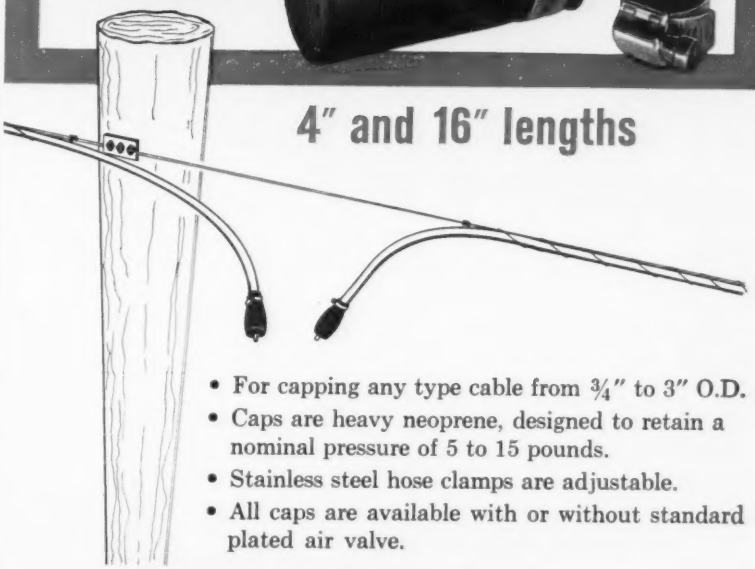
**Please send me** catalog and price information on cable caps

NAME_____

COMPANY_____ POSITION_____

STREET_____

CITY_____ ZONE____ STATE_____



**4" and 16" lengths**

- For capping any type cable from ¾" to 3" O.D.
- Caps are heavy neoprene, designed to retain a nominal pressure of 5 to 15 pounds.
- Stainless steel hose clamps are adjustable.
- All caps are available with or without standard plated air valve.

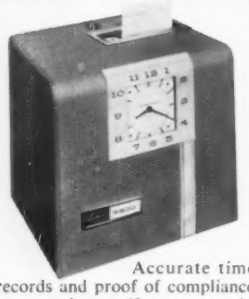
*For full information use coupon above*

Reliable
ELECTRIC COMPANY
*Franklin Park, Illinois*
*A Symbol of Integrity Since 1909*

**Keep those wage hour records on a**

*Lathem*

**TIME RECORDER**



Accurate time records and proof of compliance are *mandatory*, if you are subject to the Wage Hour Law.

For years, Lathem Time Recorders have been simplifying wage-hour timekeeping for business. Many companies have avoided stiff fines by having time cards to prove compliance.

And, here's another fact, the new revisions in the wage-hour law may mean increases in your salaries and wages. If so, it will be more important than ever to eliminate tardiness with a Lathem Time Recorder.

There is a Lathem to fit your size business — priced to fit your business budget, and capable of paying for itself in a matter of months.

**LATHEM TIME RECORDER CO.**
*68 Third St. NW, Atlanta 8, Ga:*
WITHOUT OBLIGATION Send catalogs and prices on Lathem Recorders, together with proper time cards for keeping wage-hour records.

COMPANY_____
CITY_____
STATE_____
SIGNED BY_____


tomer and telephone company.

The most important public relations item on routine calls is the constant care necessary in the approach used as you meet the new operator at the board or greet those whom you know. The same approach to an operator who knows you (and you hope has learned to like you) can't be used to the new girl you have never met before. She would be suspicious that you were there to criticize her work. Or the girl you meet on a job who realizes you know she was dismissed from the last PBX job you visited her.

How about the new girl on the job you discover is a retired telephone company employe? She is often resentful of a younger woman coming to tell her how to operate a board! Some feel — with their telephone background — there is nothing new you could tell them.

The climate of the West Coast of Florida has brought thousands of retired telephone employes to live in our area. We find many of these men and women in full or part-time jobs with hotels, motels and other businesses. We welcome them and in almost all cases find them the finest co-workers possible.

Questions don't always come from operators, and many times are not about switchboard service. The manager stops you about a colored telephone at his home — Could it be changed Tuesday, his wife's birthday? An employe stops you about a toll call on his bill — The parking-lot attendant asks when service will be extended to the new subdivision he just moved into. So tact, courtesy and diplomacy must quickly team up with your knowledge (or lack of knowledge on the particular subject) to give our customer definite, interested and helpful answers.

**Friday** — the appointment to train the bank operator. Today we go over instructions for the 100-T operation in detail, answer her questions, suggesting she study instructions over the weekend, assuring her you will be back Monday and stay with her through the cutover.

A rough week? No! A week of service to others! In this job you must like people and enjoy being with them. Knowledge — yes — you must have thorough training, in your field and knowledge of all departments in the telephone business. You can't be a specialist and be ignorant of the telephone business as a whole.

You must love your work and remain happy to face each day's problems as well as joys! This is no place for discouragement or self-pity. Service to others is the most rewarding work obtainable, and the telephone company is in this kind of business.

Be prepared for the job. Then meet each day with the dignity, aplomb and humility which assures each contact the Traffic Department's part in public relations has been capably handled by the communications service advisor — *Miss Wyman presented this paper at the* 1961 *USITA Traffic Conference.*

## "Pricing For Profit"

*(Continued from page 57)*

tomer equals the installation costs. Then there would be no disparity, but it is likely there would be no sale if such were the pricing plan.

"How does one estimate the location life of a new item of equipment?" Unfortunately, there is no formula or guide, so far as I know. As we gain experience with related items and through market research, the future may hold more definite answers. In the meantime, estimates based on related items are almost our only source.

### Investment Protection

OFTEN WE use termination contracts to protect our investment against early removal. In those instances where the investment is substantial, such procedures may be warranted. But the cost of processing and maintaining the paper work connected with termination contracts may prove burdensome for minor items.

Keep in mind the Internal Revenue Service has ruled that monies collected as termination charges are to

**TYPE 16-B MULTI-STATION 7-CHANNEL CARRIER**
***is your low-cost answer!***

**Budelman Type 16-B Carrier will:**

- Provide additional circuits on existing multi-station lines.
- Provide additional circuits on new multi-station lines.
- Improve service on existing multi-station lines.
- Provide new circuits to new stations in areas beyond the 1200 ohm loop.
- Provide additional trunks to remote PBX, PABX, or key telephone systems.

FULLY SELECTIVE 10-PARTY DIVIDED RINGING
SEMI-SELECTIVE 10-PARTY BRIDGED RINGING
SINGLE FREQUENCY CODED RINGING

**all this without additional wire lines — without disturbing existing services!**

7 Channels — 10 to 140-kc freq range. Applicable wherever attenuation at carrier frequencies does not exceed 35-db.

*Write for Bulletin 259-D — or call us*

**BUCKEYE TELEPHONE & SUPPLY CO.**
1250 Kinnear Rd. • Columbus 21, Ohio
Phone—HUdson 8-0655 (Area Code 614)

*A Directory for the*
**Madison Telephone Company**

*Printed by*
**R. R. Donnelley & Sons Company**
2223 South Park Way, Chicago 16



NEW

# HIGH FREQUENCY SELECTIVE VOLTMETER

**WAVE ANALYZER**

**MODEL 2173A**

**SPECIFICATIONS**

**FREQUENCY RANGE:** 3 kilocycles to 2.0 megacycles.
**LEVEL:** −72 to +32 dbm (full scale).
**ACCURACY:** ±1 db. −80 to +32 dbm.
**SELECTIVITY:** 250 cycles
2800 cycles
Wide band (normal IF)
**SPURIOUS RESPONSE:** Below 60 db.
**INTERMODULATION:** Below 60 db.
**INTERNAL CRYSTAL CALIBRATION** for frequency and level. Speaker or headset for aural monitoring.
**POWER REQUIREMENTS:** 110V AC 50/60 cycles.
**WEIGHT:** 28 pounds. Portable unit.

The Model 2173A Frequency Selective Voltmeter is an extremely versatile instrument for measuring levels of carrier and subcarrier microwave base band groups. For full information and demonstration, call your nearest Rycom representative or phone: Code #816 — FLeming 3-2100.

*Also available from stock:*
*Model 2171A—Frequency range 50 cycles to 6 kilocycles*
*Model 2174A—Frequency range 300 cycles to 400 kilocycles*

**RYCOM** INSTRUMENTS
*A Division of* RAILWAY COMMUNICATIONS, INC.
9351 E. 59TH STREET, RAYTOWN, MISSOURI
Phone: Code #816—FLeming 3-2100

# FAST CUTTING

## high-quality tools for pole, crossarm, and wiring jobs...

Installations go smoother, faster when you standardize on precision-made GREENLEE tools. Wide choice of bits, drills, and ship augers for power drill or brace use. See your distributor or write for literature.

### NEW GREENLEE NO. 437 UTILITY CHISEL

An all-new GREENLEE chisel for cutting daps in line poles. Blade is 2" wide, and heat-treated the full length for maximum service. Handle can't loosen or come off. Tough plastic handle . . . steel capped . . . extra long for firm, comfortable grip.

**GREENLEE TOOL CO.**
1778 Columbia Ave.
Rockford, Illinois
GREENLEE


be considered as revenue and are subject to federal income tax. If you don't consider this in the computation, you'll be protected for only 48 per cent of the investment, if for example, you pay 52 per cent federal income tax.

Another approach has been to ask for contributions in aid of construction. Such action may be warranted in special cases. Remember, where the contribution offsets the investment, we have no basis on which to earn a profit.

What happens to maintenance costs for these extra services? They could be higher, lower or the same as our average maintenance costs for station equipment. Engineering analysis will be most helpful in these estimates, but other factors should be considered.

Take the case of an on-premise intercommunicating system not connected to the exchange network. After a careful inspection by the Engineering Department, they may decide the maintenance for the on-premise equipment will approximate that spent on an average item of station equipment.

If in your annual charges, you express station maintenance as a percentage of investment and if this average percentage includes all phases of station maintenance — the instrument, inside wiring, drop, subscriber loop and central office facilities — we'd be overstating maintenance costs on the intercom by using average station maintenance costs. In this instance, we'd not be concerned with those costs associated with maintaining the drop, subscriber loop and central office facilities.

There will be instances where the estimated maintenance costs will undoubtedly be higher than average. For example, the average maintenance is higher for colored instruments than it is for black.

You may begin to think these extra services are not worth the time involved. After all, we're in the telephone business so let the customer worry about his *extras*. This is undoubtedly the easy way out, and we may survive — for a while.

Once the door is opened slightly to permit the customer to provide one piece of station equipment, there will be others on the other side of the door trying to push it open even further to provide more and more of his own station equipment. Our long-held position of owning all facilities connected to the exchange and toll network, within practical limits, will certainly be in jeopardy.

Our customers will have a great deal of assistance in this push from firms outside the telephone industry ready and willing to provide all the service they can, short of line facilities. I hate to think what would happen to our maintenance costs then, if we tried to maintain a satisfactory quality of transmission.

### The Inventory Problem

ANOTHER problem is the inventory required for maintenance, replacement and changes of the various items of supplemental equipment. Not only are we faced with the problem of maintaining replacement parts for older items of equipment, as well as the more recent versions, but the addition of color has added to the inventory in the storeroom.

If we base our prices on equipmen in service, how do we recover costs associated with those items sitting on the shelf? If we require one spare piece of equipment for each 10 in service, it's logical that we should increase our investment and certain expenses by 10 per cent in our cost computations to support the inventory required.

During the latter part of July, I attended a utility management workshop at Columbia University. One afternoon the discussion centered around utility earnings or rate of return. I asked, "Why don't we call a spade a spade and refer to the subject as profit?"

One of the group, who is in a utility other than the telephone industry, was shocked at such a suggestion. He believed the term "profit," insofar as our customers are concerned, is an obscene word. He said that in group discussions in the industry it may be all right to use the term profit but, insofar as the customer was concerned, we should use the term

*beauty, uniformity and economy!*

FLOOR-CON allows all telephone work to be completed in advance of moving. Approved and specified by telephone companies, FLOOR-CON is used exclusively in many large buildings in business, industry and government. Attaches to all makes of underfloor ducts, floor boxes and single conduits through the floor. All necessary fittings will be supplied to adapt Floor-Con to your particular duct system or Floor Installation — specify type and make in use.

**Model 103** includes the matching cover in chrome or brass satin finish. The cover encloses the amphenol plugs and jacks when used with key telephone sets or other complex equipment.

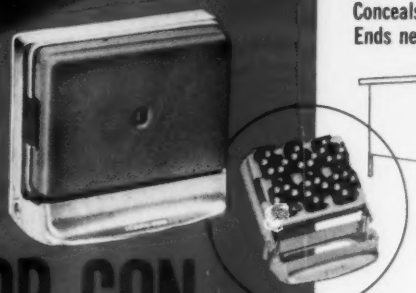
Additional connecting blocks and miscellaneous equipment can be mounted on the back of all models.

IF NO CONDUITS ARE PROVIDED, FLOOR-CON CAN BE SCREWED DIRECTLY TO THE FLOOR. NO FITTINGS ARE NECESSARY.

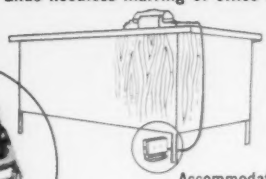
**FLOOR-CON TELEPHONE FLOOR CONNECTOR**

MODEL 103 encloses Amphenol plugs and jacks

MODEL 102 WITH STANDARD TELEPHONE COMPANY COVER



**Conceals all wiring—Desks are free from telephone equipment**
**Ends needless marring of office furniture** PAT. #2854166



**Model 102**—
Chrome or brass satin finish. Accommodates 3 44A Connecting Blocks.

**Model 104** (Not Shown)
Chrome or brass satin finish. Accommodates 4 44A Connecting Blocks.

For catalog information and prices, write:

**FLOOR-CON**

DISTRIBUTED BY
**GRAYBAR ELECTRIC COMPANY**

750 NORTH SPRING STREET / LOS ANGELES 12, CALIFORNIA / MAdison 4-5400



**HOW TO APPLY STATISTICS TO ENGINEERING DATA**

***—for more complete, accurate analysis***

AIDED by this engineer's guide to practical statistics you can more fully analyze processing, research and other kinds of industrial data. In plain terms it tells you how to apply statistical methods to engineering problems . . . how to correlate data . . . and how to treat experimental factors. Especially helpful, this easy-to-use book explains the technique of drawing the "best" line through data, and of accurately analyzing the variance. And—to round out your working knowledge of statistics—it gives you essential information on probability, theory and frequency distributions. When you have a specific problem in statistical analysis, turn to the clear guidance, detailed examples, and more than 180 quick-reference tables in these pages.

**APPLIED STATISTICS FOR ENGINEERS**

By WILLIAM VOLK

*Senior Research Engineer, Hydrocarbon Research, Inc.*

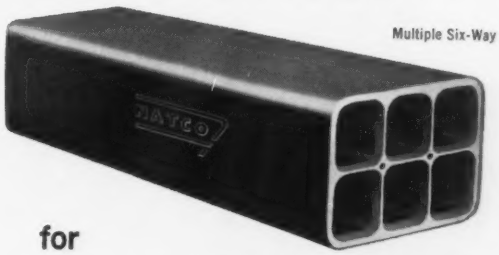
354 pages, 6 x 9, 27 illus., 181 tables, $9.50

**Educational Division**
**TELEPHONE ENGINEER & MANAGEMENT**
**7720 N. Sheridan Rd.** **Chicago 26, Ill.**



**NATCO CLAY CONDUIT**

Multiple Six-Way

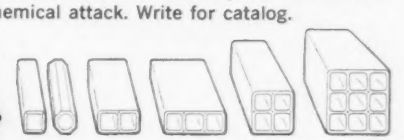



**for**

**PERMANENT PROTECTION OF UNDERGROUND CABLE**

Natco Clay Conduit is furnished in both single and multiple duct for the permanent protection of underground telephone, telegraph, signal, power and lighting cables against fire, corrosion, electrolysis, mechanical injury and chemical attack. Write for catalog.

**ALSO AVAILABLE IN . . .**



SINGLES TWO-WAY THREE-WAY FOUR-WAY NINE-WAY

**natco corporation**

327 Fifth Avenue, Pittsburgh 22, Pennsylvania

Some people don't know

A GOOD TRENCH

from a hole in the ground

Let's face it. Nobody buys a trencher. They buy mile after mile of trench! Your problem is to get your underground plant in as fast and efficiently as you can.

How to do it? Get the trencher that costs less to operate and maintain, avoids costly downtime, yet puts up to 800′ of clean, smooth trench behind it every hour! Get an Auburn Gear-Draulic Trencher. This rugged, one-man trencher penetrates fast, cuts from 6" to 14" wide, down to 6′ deep. Digging chain, with patented alloy steel cutting bits, prevents jamming or clogging, under wet or clay conditions. Gear-draulic drive automatically adjusts speed to changing soil conditions, serves as safety factor against hidden objects.

AUBURN

The Quality Trencher

Each Auburn model is specifically designed for the tractor or jeep on which it is to be installed. Models available for: INTERNATIONAL HARVESTER industrial tractors, FORD 4-speed transmission tractors, MASSEY-FERGUSON Work Bulls. Also available for WILLYS JEEP.

Send for complete information today!

AUBURN MACHINE WORKS, INC.
2035 South J Street, Auburn, Nebraska, U.S.A.
Phone: BRidge 4-3141

"rate of return" as a sort of camouflage.

It is interesting to analyze words and terms by the various meanings given in the dictionary. The word "rate" could mean velocity or speed and, according to the dictionary, the word "return" could mean return. Putting the two together could mean the speed with which we return, and you might add — to the commission for rate relief. The term "rate of return" is also vague because of the various ways it can be computed.

Some commissions use an historical rate base as the basis for computation. Another state uses reproduction cost new as the basis for computing rate of return, while other commissions use fair value which generally is a combination of both. On the other hand, the term "profit" as defined in the dictionary is clear. It is "the pecuniary gain resulting from the employment of capital in any transaction," and this is what we have in mind.

**"How Much Profit?"**

ONE OF THE big questions is: "Just how much profit should we receive from the supplemental services?" In making this decision keep in mind competition and salability. Although a company may have an over-all profit objective for its total business, isn't it reasonable to assume certain piece parts of the business should earn more than the average and others might earn less?

Assume a company has decided it needs a certain number of profit dollars to operate successfully, to attract capital, to provide good service. When you equate these profit dollars to something such as capital invested or plant in service, the result is 7 per cent. Does this mean each segment of the business and each item of service should earn about 7 per cent? I don't think so.

If we are to market our products and services successfully, a certain amount of latitude must be given to the profit picture for various items. Why is it wrong to earn 20 per cent on one service and 4 per cent on another, as long as the over-all earnings in these extra services are not subsidized by exchange rates?

In considering items in pricing supplemental services, you may wonder whether we will price ourselves out of competition. I have seen a number of cases in the immediate past where a telephone company was underbid by an outside firm, but the business was given to the telephone company.

The main reason lies in the fact that the customer recognizes the high quality of service and maintenance provided by the telephone company.

Another question is: "Do we have a big enough investment in these services to warrant the added time required for these computations?" If we were to separate investments, expenses, and revenues associated with supplemental services, the result would be startling.

The majority of these questions must be answered by you, the management of your company. Some items will require understanding and the sanction of your state regulatory body. They are all important in the future of our business, if we are to continue our growth as a communication company.

The automobile industry is a good example of the promotion of these so-called extras. When you buy a car today, I needn't tell you how fast the extras add up. I'm not advocating we follow the hard-sell approach of the automobile dealer, since we are aware of costs involved in customer dissatisfaction and early removal. The American public is just not content with the essentials. We naturally require the extras.

History is filled with cases where an industry was content to rest on its laurels and ignore customer demands. Not too many years ago the railroads were the only practical means of transportation to get from one location to another. I needn't tell you of their plight today.

I'm sure none of us have any desire to see the telephone industry take the same route. But I am confident that if we do not fulfill the customers needs, the future of our industry will be threatened — *Mr. Kingston presented this paper at USITA's* 1961 *Commercial Conference.*

## "REGULATION"

*(Continued from page 55)*

profitable year is not only good news for the stockholders, but it's reassuring to public utility commissioners, particularly if it confirms their decision.

It should be the constant job of management to keep the investor, customer, and employe mindful of the fact it is from profits that money comes for the future growth and expansion of the business. Without profits the moneylenders aren't interested.

The Independent telephone industry is faced with a 25 per cent greater telephone growth problem than the Bell System. The increase in telephones in the Bell System was 4.8 per cent in 1960, while the increase in the Independent industry was 6 per cent. This is undoubtedly due to the growth of America and its suburban areas where Independents historically have their service rather than in the big cities.

Data-processing machines now *talking* to each other at the rate of 3,000 words per minute, microwave beams transmitting information at a rate of 1.5 million words per minute, satellites, electronic switching and other advances in the art of telephone communication should show society benefits most if regulation also serves to encourage innovation and growth.

### "Progress Breeds Problems"

WE ARE COMING to live with new styles of communication service, much of it traditional service in a new wrapping and with new, coined word tags. The introduction of direct dialing, WATS, WADS, Telpak and dataphone will lead to new methods of merchandising and pricing of voice and data communication.

This kind of progress breeds problems, particularly for the small Independent telephone companies.

We know they're not going into the satellite or ECO programs for a long time, but they'll have to begin thinking about the effects these gad-

*Next page, please*

still
talking...
even with a
punctured sheath –
thanks to PUREGAS
Pressurized Systems
PUREGAS Air Dryers protect your cables through even the most adverse conditions. Pressurized dry air is pumped through the air space within your cables preventing moisture from attacking the paper insulation and shorting your circuits.
Now, with PUREGAS Systems on guard you can take care of emergency repairs on a routine schedule. No need to send emergency crews out late at night or during storm conditions to restore service. Maintenance can be safely scheduled to your convenience without worry of possible internal water damage to cables during the night.
To find out how you can take advantage of a PUREGAS Program – send for descriptive literature
"Why Cables Should be Pressurized"
Data Sheets on Model 750, 1500 and 5000 Air Dryers
Cost Comparison–Air Dryers vs. Nitrogen
PEC
PUREGAS
EQUIPMENT CORP.
578 Oak Street, Copiague, L. I., N. Y.

**REPAIR OR MODIFY**

Dials, telephone instruments and pay stations are brought to peak efficiency with minimum down time. Latest Hallamore developed test apparatus speeds the job—with guaranteed precision. Complete information will be sent to you by return mail.

—Hallamore, Division of The Siegler Corporation/ 714 N. Brookhurst St./Anaheim, Calif./ PRospect 4-1010/D.D.D. area 714.

**HALLAMORE**

*Thornhill Publishing Company*

A Division of
Western Utilities Corporation

**TELEPHONE DIRECTORY PUBLISHING**

Selling — Printing — Engraving
Production — Distribution — Collecting
Counsel for Advertisers

**OFFICES:**

300 Montgomery Street, San Francisco 4, Calif.
2911 Bond Street, Everett, Washington
13771 S.W. Farmington Road, Beaverton, Oregon
116 South Rusk Street, Kilgore, Texas
130 East Lime Avenue, Monrovia, California

Call any of our offices
for a free estimate on your directory
potential *today*—no obligation!

gets and other rapidly occurring inventions are going to have on their future operations. And many of these service improvements will have a compelling impact on toll users.

To meet the problems and to take the opportunities brought by these improvements in telephone communication, management must be alert and progressive. The days of mere order-taking are over in the telephone business.

In the face of a type of competition not dreamed of a few years ago, Independent telephone company management will have to evidence a progressive attitude and a practical flexibility to conform with the requirements of a buyers' market.

Virtually all companies in the industry, if they are to extract the full potential from every dollar invested, will have to put more emphasis and effort into selling the product — communication in many forms. All of these new services will have sales appeal, and they will be desired and demanded by the public. All these offerings should be such that the Independents may fully participate and yet be fairly compensated.

### Exchange Rate Levels

WHEN WE think of private initiative and private capital, we should be conscious that in our neighboring nation to the north, there's considerable public ownership of communication facilities.

So our own remain firm and strong on a private ownership basis, all segments of our nationwide telephone industry should make certain the exchange rate levels in comparable territories have received thoughtful and compensatory considerations.

Some of your Independents are operating single exchanges where you have no source of revenue except through the exchange earnings of your own exchange or from the toll settlements. Others with exchanges nearby, but who haven't sought exchange rates on a comparable compensatory level because they have big city earnings on which to fall back, might consider this aspect of rate comparison.

Another facet of this problem is that the Independent exchange owner be fully compensated for his participation in the toll network. If there is error in this matter, the error should be on the side of the over-compensation rather than under-compensation for the good of the whole industry.

I'm looking at the problem from the broad viewpoint of the public interest so justice may be done not only to the large integrated communication system but to the thousands of Independently owned companies whose financial health and well-being is an essential ingredient to the maintenance of a sound, privately-owned communication network in the United States.

We need strong, financially healthy Independents in this country if the free enterprise system is to survive. It's important for you to show an energetic interest in forward-looking *state* regulation.

As a member of the Joint NARUC-FCC Special Committee on Telephone Regulatory Problems, I'd like to express appreciation to your Washington office representatives and to members of your Toll Compensation Committee for their effective and cooperative participation in the discussions of the joint committee and its staff subcommittee in recent years.

The work of this joint committee is a splendid example of what can be accomplished by industry and government working together. The growth of modern technology has brought on us an interdependence foreign to the spirit of the rugged individualist in his struggle for independence.

This is a new era of *togetherness*, and let's accept the responsibility of interdependence without losing sight of the need of achieving equity for the Independent.

The interconnecting of telephone service through the properties of a multitude of individual companies weaves a pattern of changing problems requiring constant attention. But good old-fashioned round-table discussion and man-to-man talk germinates a brand of logic conducive to settling an argument and getting on with the job.

Having been privileged to serve as a member of this committee for the past 10 years, I suggest much has been accomplished, and because of this record I'm hopeful a solution will soon be found in formulating a plan for the fair distribution of plant and profits in the handling of toll and exchange business.

A fair reasonable distribution of the earning potential of interstate, intrastate toll and exchange service is a *must* if the Independent is to remain Independent.

Don't forget that the phenomenal growth of our nation's communication system is due in part to the unfailing industry and alertness of the Independent telephone companies. They have contributed to the splendid achievements of the industry, and through the coordinating efforts of the U.S.I.T.A. a nationwide awareness of the obligations of a public utility has been inspired and encouraged.

Because of this association, the Independent telephone company is constantly reminded that operating a public utility is a public trust.

I could also say, "Use the initiative that is in the strength of the Independent telephone industry." But Independent initiative *has* been proved:

When we look at the telephone investment today in 1961, the biggest single investment in central office equipment in the telephone industry, nationwide, is in the step-by-step equipment fostered by the Independent telephone industry during the past 60 years.

There are as many Independent telephones in the United States as there are in Great Britain and France combined.

One out of every seven telephones in our country is owned and operated by an Independent company.

The Independent segment of the industry owns and must accept responsibility for nearly 12 million telephones.

Because of this great public service industry, you have an investment in regulation! — *Mr. Mitchell presented this address at the* 1961 *USITA convention.*

*Hi Folks!*

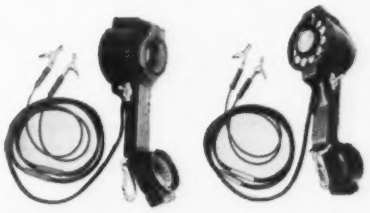
Here are some of our guaranteed rebuilt instruments that look and operate like new. Also, our New Test Set. Drop me a line for quotes and our catalog.

**Western Electric and Kellogg #500 Telephones**
**WALL or DESK MODELS**

Factory Reconditioned Instruments equivalent to New with a full Guarantee and Refund Privilege. New Black Cases, Cords, and many new-surplus parts, including cycle ringers now available. Shipped 10 per carton, and we will pay the freight to your door on an order of 20 or more.

**PRICE $14.50 — Dial Blank; or with Dial, Less Ringer (install your cycle)**
**PRICE $17.50 — With Dial and Straight Line Ringer**
**PRICE $19.50 — With Dial and Cycle Ringer — Harmonic, Synchromonic, Decimonic**

**LOOK — NEW!**



**BECO'S #1011 RUBBER TEST SET**

Equipped with a Standard W. E. Dial and Components, Nylon Cord, Piercing Test Clips and Special Belt Snap. Rugged and Dependable.

**PRICE $27.50**

**W. E. 354 WALL and W. E. 302 DESK TELEPHONES**

Self-contained Sets with the appearance and operation of a new unit, equipped with Straight Line Ringer, or most Cycles can be supplied.
**Price $10.50—Dial Blank, C.B.**
**Price $12.50—With Met. Dial**

**LATE COMPACT MAGNETO TELEPHONES**
**Stromberg-Carlson, Leich and Kellogg**

We have a limited quantity of these late strong alnico generator type sets for those long rural lines, Reconditioned and ready to go. (Please state second choice.)

**PRICE $17.50**

**BOHNSACK EQUIPMENT COMPANY**
GERMANTOWN, NEW YORK
LEhigh 7-6213

# TELEPHONE MARKET PLACE

**CLASSIFIED RATES: 15c per word, minimum charge $2.00. Cash with order. Add 4 words for box number. Closing deadline: Copy in written form in Chicago office no later than 20 days preceding publication date. DISPLAY CLASSIFIED RATES: Take card rate of $8.00 per column inch, and card discounts, size and frequency apply.**

## HELP WANTED

### TELEPHONE ENGINEERS

Local and out of town positions. Top pay plus per diem allowances. Short and long term assignments available in the following:

- **TRANSMISSION ENGINEERS**
- TRAFFIC ENGINEERS
- OUTSIDE PLANT ENGINEERS
- TRAFFIC ENGINEERS
- CARRIER TRANSMISSION ENGINEERS
- EQUIPMENT ENGINEERS
- MICROWAVE & RADAR

*Retired telephone engineers welcome.*

Send detailed resume to:
D. J. KAY

### KAY & ASSOCIATES

1605 Palm Drive
Mt. Prospect, Ill.

## HELP WANTED

**WANTED—OFFICE SALESMAN.** Growing midwest manufacturing company serving the telephone industry needs capable man to handle sales correspondence, and customer relations with opportunity to become assistant sales manager. Some traveling. Write Box 208, c/o TE&M.

**AMBITIOUS MEN** — Qualified as station installers, equipment installers, cable splicers, linemen Work in midwest. Harris McBurney Co., Inc., P. O. Box 267, Jackson, Michigan.

**ACCOUNTANT** qualified to assume full responsibility as Accountant and Commercial Manager for Class "A" company operating in Florida and Georgia. Please give full resume and salary expected in first letter. Write to Box Number 202, Telephone Engineer and Management.

**ACCOUNTANT** for rapidly expanding Class "A" telephone company located in Arizona, New Mexico and Texas. Please send resume listing experience and family status to Auditor, Western States Telephone Company, Inc., P. O. Box 305, Holbrook, Arizona.

**TELEPHONE ENGINEER** with at least 10 years experience on inside and outside telephone plant. Man with professional license given preference. Send complete resume of experience and references in first letter. McGrath Engineering, Inc., 209 W. 6th St., Topeka, Kansas.

## HELP WANTED

**WANTED:** Manager for a rural telephone cooperative serving 1,200 members. Application should be made on REA Form 328. Applications may be secured from H. M. Benson, President, West Texas Rural Telephone Cooperative, Inc., P. O. Box 753, Hereford, Texas. The closing date for application is October 22, 1961. Following in line with applicants training and experience.

**TRANSMISSION ENGINEERS**—To work as transmission consultants. Write Box 211, c/o TE&M.

## POSITION WANTED

**YOUNG MAN** experienced in all phases both inside and outside plant, desires to relocate. Eleven years experience. Box 209, c/o TEM.

**GENERAL MANAGER** for telephone company of 10,000 stations or more. Fifteen years' experience as follows: plant, traffic, commercial, and administrative in both Bell and independent fields. Marketing (commercial and government) and outside plant engineering with equipment manufacturer. Write Box #210, c/o TEM.

## FOR SALE

**USED TELEPHONES** — 189 Stromberg Carlson 1243's, 78 Stromberg Carlson 1250's, 58 North 9800's, and 31 North 9000's.These are priced to sell. Quantity lot prices $3.75 per set. Polar Rural Telephone Corp., Park River, N. Dakota.

**FOR SALE:** Six positions of No. 3 Stromberg-Carlson Toll Switchboard. For information, write or call Knox Hagar, California Water & Telephone Company, 115 East Lime Avenue, Monrovia, California, Telephone EL 9-8151 Extension 821.

## WANTED TO BUY

**SWITCHBOARDS,** new or used North CX100, CX200 and CX1000 or equivalent. Send information to R. David Thompson, 35 Arthur St. Whitman, Mass.

**TELEPHONES** — Any condition Desk stands, wall sets, etc. Advise quantity available. Write Box 78, c/o TE&M.

## PRODUCTS & SERVICES

**BELTS — CLIMBERS** — Complete Linemen's equipment, W. M. Bashlin Co., Bashlin Bldg., Grove City 1, Pa.

**BORING MACHINES, EARTH** — Highway Trailer Co., Edgerton, Wisc.

**CORDS,** Switchboard (with or without plugs), Instrument (straight and retractile) cords in eleven colors. — Commercial Cord. Co., Inc., 26 Main St., Clifton, Springs, New York.

### SELECTOR SWITCHES

240 each Federal #SA-10344-A Selector Switches mounted 20 per on 12 #SA-60057-A Shelves with banks. (Late type in very good condition)

30 each Automatic Electric #H-51223A (205179A) Selector Switch — PAX Restricted Service (Late type in very good condition)

### TRUNK REPEATERS

20 each Automatic Electric H-61909 (858496A) Outgoing Pulse Repeaters for trunks of 3000 ohms or less. (Very good condition)

20 each Automatic Electric H-61653 (857577M) One-way from Selector Mult. 2-Way between Att. Cab. and Auto. or Manual C.O. (Very good condition)

20 each Automatic Electric H-61724-1C (857782PZ) Trunk Repeaters (New)

10 each Automatic Electric Repeater Shelves (10 per) 51-1/8" long with 24 pt. jacks. (new)

### TERMINAL BLOCKS

250 each Automatic Electric #66686-A Terminal Blocks 3 x 25, length 8" width 3-7/16" (New)

75 each Automatic Electric #66843-A Terminal Blocks 3 x 20, length 6" width 3"

### BUCKEYE TELEPHONE & SUPPLY CO.

**1250 KINNEAR RD. COLUMBUS 21, OHIO**

**488-0655 (Area Code 614)**

**RDW Brackets — Refinished**
J-8236 Pole Brackets .....$ .60 ea.
J-8235 Arm Brackets .....$1.00 ea.
Prepaid in lots of 50 or more.

**6 in. Thimble eye Screw Anchors**
¾ in. x 5½ ft. .....$3.00 ea.
Prepaid in lots of 24 or more.

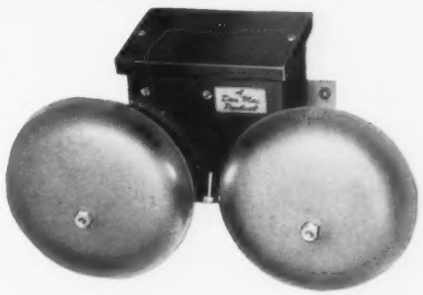
**Telephone Equipment, Inc.**
**Montrose, Michigan**

## PRODUCTS & SERVICES

**EVERY MONTH**
More and More Telephone Companies use DIRECTORIES produced by
Your Inquiry Respectfully Solicited
**LELAND MAST**
DIRECTORY COMPANY
1619 GREENWOOD WILMETTE, ILL.

# DAN MAC DELUXE
## WEATHERPROOF LOUD RINGING EXTENSION BELLS

**With Aluminum 6-Inch Gongs and Non-Magnetic Aluminum Cases with Outside Mounting Brackets Available in Straight Line and All Frequency Ringing. High Impedance or Low Impedance.**
***Special Resistance on Request.***



*DISTRIBUTED BY JOBBERS OF TELEPHONE EQUIPMENT.*

**TELEPHONE REPAIR & SUPPLY COMPANY**

**DECALS**
Made for trucks and equipment
Small or large quantities
*Write for free catalog*
**MATHEWS COMPANY**
827 S. Harvey Oak Park, Ill.

**POLES • CROSSARMS**
**RAIL or TRUCK DELIVERY**
Pressure-treated to your specifications. 16 sales offices, 34 plants serving you. See Yellow Pages, write or call Pittsburgh EXpress 1-3300.
C-10
**KOPPERS COMPANY, INC.**
Wood Preserving Division
777 Koppers Bldg., Pittsburgh 19, Pa.

NORTHERN WHITE
**CEDAR POLES**
FULL LENGTH PENTA TREATED
**PAGE & HILL, INC.**
Plymouth Bldg., Minneapolis 3, Minn.

# CABLE SPECIALS . . . all new . . . guaranteed perfect

**SUBMARINE CABLE** (also ideal for direct burial)
26 pair #19 ga. paper insulated lead covered—two layers steel wire armor, & jute 800 & 500 foot reels (one length per reel) F.O.B. L.A. or Fresno, Calif.
Western Electric .....14000 ft available—50¢ ft.
**DIRECT BURIAL** 26 pair #22 Ga. paper insulated lead covered, two layers steel tape armor, jute protected. Western Electric .....4 reels 2500 ft. each, 35¢ ft. f.o.b. LA
26 pair #19 ga. as above, but single tape armor, 1465-1400-500 ft. lengths 40¢ ft. f.o.b. LA
1 quad #18 ga. textile insulated, color coded, lead covered, 2 layers steel tape, armor jute protected. 3000 ft. one length .....10¢ ft. f.o.b. LA
**Plastic type** (suitable for submarine or direct burial) 1 quad #12 ga. shielded from 12 conductors #16 ga. (2 pairs of which are suitable for telephone) other 6 conductors may be used for DC signaling, pressure alarm, battery feed, etc. single (13 strand) steel wire armor, jute protected, PVC insulated and jacketed. 3000 ft. reels (one length) weight per reel 6000 lbs. (sample on request) .....15¢ per foot F.O.B. Salt Lake
**OTHER TYPES**
11 pair #19 ga. paper insulated, lead covered. Western Electric,
4—4500 ft. reels, 1, 1400—1, 1600 ft .....15¢ ft. f.o.b. LA
7 quad #19 ga. paper insulated, lead covered .....15¢ ft. f.o.b. LA
several sealed lengths per reel (approx. 3000 ft.)—(send for actual lengths per reel list)
7 quad #19 ga. PVC insulated, PVC covered "Superior"
4937 ft.-285 ft., 2 lengths on reel .....20¢ ft. f.o.b. LA
37 quad #19 ga. paper insulated, lead covered, W.E., 1050 ft. (one length) .....50¢ ft.
51 pair #19 ga. paper lead, W.E. #ENB, 890 ft. one length .....50¢ ft.
51 pair #19 ga. +4 pair #16 ga. (shielded pairs) paper lead, 1200 ft. lengths .....50¢ ft.
76 pair #22 ga. paper insulated lead covered, W. E., 200 ft.-200 ft.-150 ft. .....40¢ ft.
101 pair #19 ga. PVC insulated, Neoprene covered (not shielded)
1300 ft., 1 length .....75¢ ft.
152 pair #26 ga. paper insulated lead covered, 2000 ft., one length .....75¢ ft.
303 pair #19 ga. paper insulated, lead covered, 200 ft., one length .....$1.50 ft.
303 pair #22 ga. PVC insulated & covered, ANKOSEAL #775P
600 ft., 1000 ft. lengths .....2.00 ft.
404 pair #26 ga. paper insulated lead covered, W E., 2—1400 ft. lengths .....2.00 ft.
Note: prices quoted are for lengths shown

**The Telectric Co.**
1218 VENICE BOULEVARD • LOS ANGELES 6, CALIF.
Telephone: RIchmond 8-2249

***STORM & FLOOD AREAS***
***— May We Help ? —***

Military Types wire & Cable for temporary use —

Army Field Wire, late type WD 1 TT twisted pair-Nylon covered (tough) 3 steel -4 copper strands per conductor over, on, underground or in the water. Weighs only 48 lbs per mile, net; New-1 mile length per reel .....$50

WD 3 Assault Wire-1 copper-6 steel strands per conductor-twisted pair rubber insulated-saturated cotton covered-¼ mile per reel .....$3 new

W 130 C, as above, but plastic insulated, ½ mile per reel .....$10

Direct burial wire, #17 solid, soft copper, parallel pair, buna covered, 2500 ft. (one length per reel) New $10. M ft.

As above #17/2, plastic jacket, 5500 ft. per reel .....$10. M. ft.

.104 Copperweld, 40%, twisted pair Neoprene covered, per M ft. .....$40.

5 pair #19 ga. solid, tinned copper neoprene covered .....$50. M ft.

LB -CB switchboards with MDF for quick-plg-in service -phones.

Financing if needed.

## PRODUCTS & SERVICES

**"DIALS"**

**Dial Haven Reconditioning Service provides expert workmanship plus genuine and improved parts to insure longer life for your telephone dials.**

**DIAL HAVEN INC.**
P.O. Box 655 Monroe, N.Y.
Code 914 783-2221

**USED, SERVICE REPRESENTATIVE TUB FILES AND DESKS.**

One tub file and two desks per unit, 45 complete units available, good condition reasonably priced.

**RAMSEY BUSINESS EQUIPMENT, INC.,**
BOX #1354 CINCINNATI, OHIO
PHONE GA 1-3738

**POLES,** Southern Yellow Pine Pressure Creosote and Creo-Penta — Piedmont Wood Preserving Co., P. O. Box 700 Augusta, Georgia, Spartanburg, S. C.

**POLES,** Southern Yellow Pine — Taylor Colquitt Company, 217 Main St., Spartanburg, S. C.

**POLES,** Southern Yellow Pine — Texas Creosoting Co., Orange, Texas.

**PROTECTIVE EQUIPMENT** — Reliable Electric Company, 11333 Addison St., Franklin Park, Ill.

**USE**

Telephone Engineer & Management's Telephone Market Place

**A SMALL AD COVERS THE FIELD**

## PROFESSIONAL SERVICES

**ALLEN K. HAMILTON ASSOCIATES, INC.**
CONSULTANTS - SYSTEMS ENGINEERS
GENERAL ENGINEERS
WOODSTOCK, ILLINOIS TELEPHONE FEderal 8-2400

**TUDOR AND YAGER INC.**
TELEPHONE CONSTRUCTION
TIPTON, INDIANA
Phone OSborne 5-2267

**McGRATH ENGINEERING, INC.**
*Consulting Engineers*
209 West 6th Street
TOPEKA, KANSAS
Telephone CEntral 2-2358

**CARL C. CRANE, INC.**
*Consulting Engineers*
121 S. Pickney Street, Madison 1, Wisc.
Telephone ALpine 6-0247

**SLOAN, COOK & LOWE**
Consulting Engineers
Appraisals — Original Cost Studies
Toll Separations — Plant, Traffic and Commercial Engineering
176 West Adams St. FRanklin 2-5924
Chicago 3, Ill.

Consulting Engineers by the month or by the year to relieve your peak engineering loads.

**KAY & ASSOCIATES**
1605 Palm Dr. Mt. Prospect, Ill.
HEmstead 9-1386

## PRODUCTS & SERVICES

*Whether a Winch Line Hook or a complete Line Body check your requirements with*

**UTILITY TOOL & BODY CO.**
CLINTONVILLE, WISCONSIN

UT&BCo. BUILDERS OF DEPENDABLE EQUIPMENT SINCE 1919

## PROFESSIONAL SERVICES

Communication Systems, Electric Transmission and Distribution Systems
**ASSOCIATED ENGINEERS, INC.**
CONSULTING ENGINEERS
1127 Alderson Ave.
Billings, Montana
TEL. 2-4113

**HARRIS-McBURNEY CO.**
PUBLIC UTILITY CONSTRUCTION
*A complete construction service for the telephone industry*
Construction Crews Designing
Station Installers Appraisals & Reports
Cable Splicers C. O. Installation
Underground Duct Systems
Telephone ST 4-6126
P. O. Box 267 Jackson, Michigan

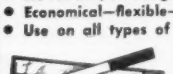
Professional Engineers Contractors
Central Office Installations
Cable Splicers Plant Crews
**HENKELS & McCOY**
1800 Johnson Street Elkhart, Indiana
Tel. CO 4-1121

**Davis** UTILITY PLANT CONSTRUCTION **Construction Co.**
45 North Clark Street • Sullivan, Missouri

## PRODUCTS & SERVICES

**Neuses CONTACT CLEANING TOOLS**

- Extend contact life and reduce contact failure.
- No residue; no filings; no grit; no dust; no film.
- Economical—flexible—insulated.
- Use on all types of contacts.



**NO. 3-316**
3" long, 3/16" wide x .007" thick. Each tool in vinyl carrying case. Sample trial package of 10 — $3.50.
50 to 950 — 24c each.
1000 and up — 22c each.

**VEST POCKET TYPE**
With 6 Replaceable Blades 4¼" long x 3/8" dia. Dielectric black plastic handle and cap.
CB-5 with 6 blades 1½" x 3/16" x .007" thick..... $3.80 each.
CB-54 with 6-.0035" thick blades ..... $3.95 each.

N-318—Heavy duty type with greater contact burnishing area. Blade is ¼" wide, .010" thick and 3¼" long.
N-318—Standard package 50.
Price 50 or more..... 40c each
N-318S-10—Trial package of 10..... $4.50

**P. K. NEUSES, INC.** *Write for catalog*
511-21 N. Dwyer St., Arlington Heights, Ill.

STROMBERG-CARLSON®
# Transmitter
NEWS AND VIEWS OF INDEPENDENT TELEPHONY

VOLUME 10, NO. 7 | Published by General Dynamics | Telecommunication | OCTOBER, 1961

## To answer challenge of Aerospace Age

# Eglin AFB installs new telephone system

**Impressive from the outside, designed for maximum efficiency today, geared to expansion as necessary — the 3,000-line XY Dial main telephone center at Eglin Air Force Base, Florida. Over 150,000 calls per day go through this exchange.**

Advanced weapons with classic names and awesome potential, space probes that shrink the universe for peaceful purposes — both are developed and tested by the Air Proving Ground Center at Eglin AFB, Florida. To facilitate its mission — "Aerospace Power for Peace" — this systems command has recently placed in service a 3,000-line XY ® Dial telephone exchange, greatly increasing capacity, breadth and quality of service for this essential function.

At Eglin — as at Cape Canaveral, Patrick and the Titan bases — one fact understandable to the layman emerges: these precedent-breaking space-age instrumentalities are completely dependent upon tried and proven telecommunication techniques for their effectiveness. This is — always has been and will continue to be — the area of contribution by General Dynamics | Telecommunication. The increasing importance of communication, electromechanical or electronic, equally applicable to civilian and defense requirements, has led to the recognition of Telecommunication as a separate, full-fledged division of General Dynamics Corporation.

The new Stromberg-Carlson telephone system at Eglin greatly simplifies calling between the several exchanges constituting the network. The work load of the principal exchange will be shared by two new primary exchanges and six satellites, all interconnected. Whereas the replaced system was handling approximately 144,000 calls a day, the new system is presently equipped to increase capacity by 45 percent.

To provide the grade of service necessary for this type of installation, the system is designed to handle 500 simultaneous calls. The main building was planned so that the principal exchange can be expanded to 8,400 lines as this becomes necessary. Wiring and cable within the exchanges would reach from Eglin to a point well beyond New York City.

To assure the dependability so vital to the assigned duties of this installation, the entire exchange will be "patrolled" for potential trouble four times daily by a Stromberg-Carlson automatic line routiner that records the number of any line not responding positively to a series of tests and diagnoses symptoms so that trouble can be averted before it starts.

The Eglin telephone system joins the ranks of more than 3,500 completed XY Dial installations, thus emphasizing the philosophy of General Dynamics | Telecommunication . . . to assume responsibility for meeting existing needs, commercial or defense, while pursuing research and development that will maintain the division's position as a leader in its chosen field — telecommunications.

**Masthead photo — See Page 128**

# Stromberg-Carlson Credit Corp.:

1951
–1961
10 years •
Over 600 loans

## Millions of dollars
at work to
strengthen
INDEPENDENT
TELEPHONY

C. W. Pritchard
President
and manager

L. J. Cleary
Vice president
and asst. manager

R. G. Slayton
Vice president
and senior
regional supervisor

R. M. Meyers
Treasurer and
administrative
supervisor

E. W. Stanton
Asst. vice president
and credit manager

P. J. Rossi
Assistant
treasurer

Ten years ago, Stromberg-Carlson originated a bold, new plan to assist Independent telephone companies with the problem that they found difficult to solve by themselves — financing for modernization and growth. After months of study and research, the plan developed into the Stromberg-Carlson Credit Corp., which has increased its activity and its service with each passing year.

*C. W. Pritchard*, president of the Credit Corp., headed the original group that conceived the idea. He points out that the purpose and function of the organization have changed to meet the needs of operating companies over the 10-year span.

"We have updated our program to keep pace with the great strides made by the Independent industry," Mr. Pritchard stated. "Now there are increasing requirements for funds to permit a company to acquire or combine with another in order to effect more profitable operation. In this rapidly changing industry our program is one of extreme flexibility, tailored to meet the individual needs of the company seeking financial and engineering assistance."

There is no one segment of the Credit Corp. operation that dominates the others — essentially it is an integrated service. Sometimes the cycle begins when a Branch Office sales representative sizes up a situation as hinging primarily on financing. He would then call in *Mark Maurer* — or it might be *Frank Dean*. They are field engineers whose "territory" is the whole country.

After going over the records and maps, Mark "drives the lines" to see what can profitably be retained and what will be replaced. His study includes outside plant recommendations and pro forma tables, including local and toll statistics (present and projected). The result is a complete exchange-requirement folder.

"I have learned never to say 'No' before making a real survey," Mark commented. "Too many times, what appeared to be impossible has actually been accomplished."

*Ed Merkel*, equipment engineer, works from the C.O. requirement data to prepare a complete office layout, specifying the number of shelves, percent trunking, power and supervisory equipment. After this is priced, it becomes a concrete proposal.

Before, during, and after the survey and engineering phases, the regional loan supervisors are in continuous touch with the prospective borrower. As you listen to these men, there is a sincere personal identification with each project: "We — the customer and I — have a new problem and together we're going to work it out." Each supervisor could fill these pages with customer stories: those selected have not previously been published and are typical, if such a word can ever be used to describe what is as individual as a fingerprint.

*Larry Cleary* cited an interesting case going back to the time when his responsibility was the upper Midwest: the *Lakefield Telephone Co.* near Manitowoc, Wisconsin. In 1959 four small subscriber-owned companies had a ¼ interest each in a fifth company that provided all their switching service with faltering outmoded facilities. Elroy Nass took on the job of improving one of these companies (English Lake), first by suggesting a merger and, when this proved impractical, persuading his directors to let him move ahead alone.

Although there was no *assurance* that the proposed dial exchange would ever have more than the 106 stations controlled, plans were made to handle the switching requirements of the other three companies. When the XY Dial system for English Lake was cut, the others did, in fact, merge; his optimism proved to be good business foresight.

Early this year another merger — equally beneficial for all parties — was concluded by Mr. Nass and his directors. The resulting corporation is financially sound and geared for growth, will serve 750 subscribers when the present program is completed.

*Marvin Gage* maintains that Vic

# a decade of service!

Asst. Vice Presidents, Regional Supervisors

**Marvin Gage**
**Area served by the Chicago Branch**

**Ernie Larson**
**Atlanta, Rochester, West Coast Branches**

**Bob Dailey**
**Area served by the Kansas City Branch**

Bradley and his sons Allen and Glen can build as good a plant at as little cost as anyone he knows. They've had lots of chance to prove it. Starting with the Great Plains Telephone Co. at *Menno, South Dakota*, they have acquired two nearby exchanges and a fourth (Mission, in the center of the Rosebud Indian Reservation). All offices, including their new Nebraska properties, are 100% dial.

When they aren't busy with their own conversions, they help other managers all over the state: Glen as specialist in installing XY Dial, Allen working on outside plant and Vic contributing the management "know-how." Vic recommends that owners should add a new column to the profit-and-loss statement: "What's left for me." His own success has come from watching this column carefully.

Next to Margaret Dwyer, secretary to C. W. Pritchard, *Bob Meyers* has the longest continuous service with the Stromberg-Carlson Credit Corp. Asked about present loan customers, Bob cited Carl Ballantine of *Pine Grove, West Va.*, whose Short Line Telephone Company includes five healthy, growing exchanges serving the chemical, aluminum and pipeline operations of the Ohio Valley industrial complex. Carl has already taken three loans to develop the property to its present excellent condition, and is considering a fourth to provide additional services for his subscribers.

*Ernie Stanton*, formerly regional supervisor in the area served by the Atlanta Branch, has had several loan customers in the Southeast, each of whom has been successful. He mentioned an experience involving two telephone men in Alabama: Mr. R. T. Holland and Mr. Clarence Watters. Mr. Holland was planning to convert Castleberry to dial. His friend Clarence Watters, then part owner of a neighboring company, agreed to help. Watters and his partner had already converted Grove Hill with the assistance of a Credit Corp. loan and he had become thoroughly sold on XY Dial. He also had come to recognize the possibility of owning his own company at just the time the COMPAK-I became available, making a small operation feasible on a dial basis. Now he operates two exchanges, *Coffeeville* and *Pine Hill*, as the new Dixie Telephone Company, having purchased Pine Hill and re-equipped it with COMPAK-I with the aid of a Credit Corp. loan.

*Bob Slayton*, who has traveled in nearly every part of the country for the Credit Corp., enjoys telling a success story about *Pineville, Missouri*, in the heart of the Ozarks.

Victor Rhine and his wife, Bille Jo, own and manage the MacDonald Telephone Company there — and do it with the competence of a big-city operation.

"After converting their Anderson office with a Credit Corp. loan," Bob explains, "the Rhines were anxious to continue with their modernization program. But the cost of stringing new lines to the Jane, Missouri, office prevented this.

"When the COMPAK-I became available, it found perfect application at Jane, and both that town and Pineville will enjoy XY Dial service soon through a second loan."

*Ernie Larson*, while a comparative newcomer to the Credit Corp. team, is known to all telephone men in the Northwest and Alaska, where he was sales representative for many years. His regional responsibility now has been broadened to include all four geographical extremes of our country — a big job which he is accepting with enthusiasm.

Three other new members of the organization have each had specialized contact with the telephone industry over a considerable period of time. *Frank Dean* is a competent engineer, whose most recent location has been Alaska. *Bob Dailey* has had wide experience in the area of marketing, and was on loan to the U. S. Government for some time in this capacity. *Pete Rossi's* experience has been in the area of cost accounting. They are already becoming known to Independent loan customers and find these contacts very rewarding.

All members of the Stromberg-Carlson Credit Corp. see further expansion of its unique service in 1962. The Corp. will continue to assist small companies in converting to dial: but more and more its task is to help the converted company, faced with the need for additional capital, to finance the growth and to acquire or combine with other neighboring companies for more economic operation.

Qualified Engineering Personnel

**Mark Maurer**
**Field**

**Ed Merkel**
**Equipment**

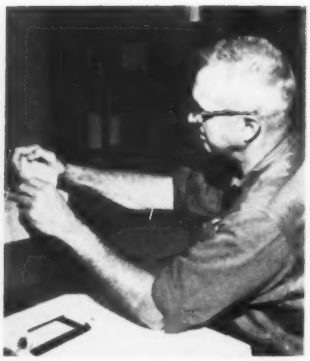
**Frank Dean**
**Field**

Ray Kessler works with the experience of 15 years at Seneca Gorham Tel. Ray, who is an installer-repairman, has added to his ability by attending the Telecommunication Training School in Rochester, N. Y.

Office procedures have been streamlined for better service. Marilyn O'Brien, far left, and Betty Appleton, far right, each handle billing for two offices. Shown in center are Jim Rinella, controller; Mrs. Charles Walters, secy-treas; and Charles Walters, president.

## At Seneca Gorham (N.Y.) Tel,

# Credit Corp. help, industrial growth



Mr. and Mrs. Charles Walters have found that the wall telephone display in their Holcomb office can produce sales. Plans call for new office ¼ mile from present site when XY dial is installed early in 1963 . . . . Fred Walters, vice president and plant supervisor keeps careful records on all outside plant construction. Ninety per cent of pole lines are carried on new poles, and Fred is closing in fast on that last 10%.

"The turning point was 1954 when we got our first Credit Corp. loan. It had been touch and go during the war and the years following. But after we cut our Honeoye office, things started looking up."

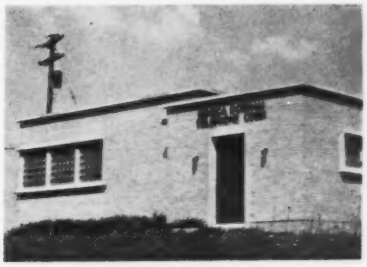
Charles Walters, president and general manager, was filling in the background on the Seneca Gorham Telephone Corporation at Holcomb, New

Masthead photo, first page — installer repairman John Santee makes jumper change at Rushville office.

This is a familiar sight in Seneca Gorham Tel territory. Much of the cabbage and other crops which supply local canning factories are grown right in the area . . . Fred Walters, left, traces a call through the Rushville office with John Santee, installer-repairman.

This office was designed and built by company personnel. Mrs. Vera Williams knows that a smile in the voice is a trademark of a good operator. She handles calls on a Stromberg-Carlson 121 Switchboard, also receptionist duties at Emerson Produce.

Production-line techniques speed poultry processing at Emerson Produce Company. Sanitary regulations are strictly enforced — photographer donned white coat and cap before entering to get this shot.



This sturdy structure, on outskirts of Stanley, houses 300 lines of XY Dial equipment.

# and perseverance prove unbeatable combination

York. His enthusiasm was a sign of the satisfaction a man gets from staying with a tough situation and riding it through to success.

Part of Mr. Walters' enthusiasm has been generated by industrial growth in the 400-square-mile area served by his company. Canning factories, a poultry-processing plant, one of the world's largest fur companies, and a new photographic film division form the hard core of this economic progress.

The Seneca Gorham Telephone Corporation consists of offices at Stanley, Honeoye, Rushville and Holcomb in central New York State, and serves 3,500 subscribers. The first three offices are already served by XY Dial: Holcomb will be converted to this service in early 1963. The Stromberg-Carlson Credit Corp. has worked closely with the operating company on all conversions, supplying engineering and accounting help as well as financial assistance.

## Teamwork aids progress

Mr. Walters is the first to recognize that his company's growth was no one-man promotion. He has been ably assisted by a competent staff of telephone people, including his brother Fred, who serves as vice president and plant supervisor; his wife, who is secretary-treasurer; and Jim Rinella, the controller and assistant treasurer. Each one shares Mr. Walters' confidence in the area.

"We've always felt that anything extra that we can put into our service will be well worth it," Fred said. A tour of the company properties was proof enough of his statement. Each office is an attractive addition to the community. Besides handling his regular duties, Fred has found time to skillfully landscape all the dial offices. He and Charles designed and built the Rushville office themselves, and it's an excellent example of what a small-town CDO should be.

## EAS for all subscribers

The company uses Stromberg-Carlson 501 Carrier to provide one of its extras — Extended Area Service between the Holcomb and Honeoye offices. EAS is also provided between Rushville and Stanley.

One of the largest telephone users in the area is the Emerson Produce Company, which prepares 36,000 fowl daily for supermarket distribution. The company uses its telephone service extensively to keep in contact with Eastern and Midwestern suppliers who must meet the company's tremendous demand for poultry.

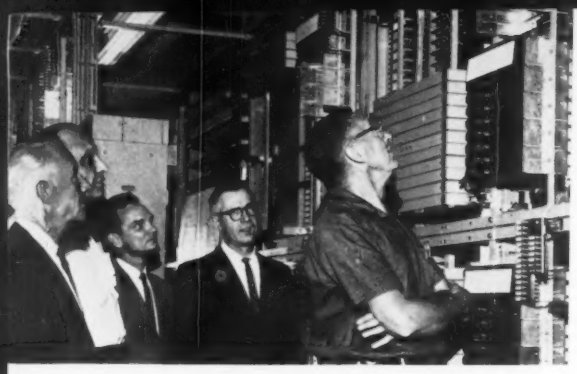
Modern PBX service has also been provided at DI-NOC Chemical Arts, Inc., the photographic film maker. The DI-NOC plant, which went into full-scale operation this month, was constructed on its Honeoye site after careful consideration of several important factors — including telephone service.

Seneca Gorham Tel has leased the Stromberg-Carlson 120 Switchboard in operation at the plant, because of the expected growth of DI-NOC. If the board is outgrown by rapid expansion in a short period of time, it can be replaced by a larger system without interfering with sound economic planning.

## Fertile land boosts economy

Although industry is continuing to move into the area, farming remains one of the chief occupations there. Corn, cabbage, beets and other crops are produced in abundance for the canneries in this fertile region. A twelve-mile strip of swampland is being reclaimed near Rushville, and muck farming there will add impetus to the economy.

Large quantities of grapes are also grown nearby to supply the wineries in the world-famous wine-producing area just south of Seneca Gorham territory. Diversification of farm products as well as of industry has been a key factor in the continued growth.

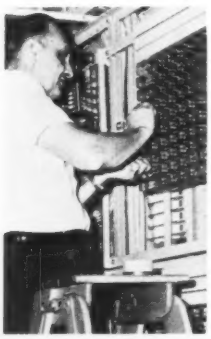


Management of Citizens Utility Company tours Susanville XY Dial office with representatives for Stromberg-Carlson products. From the left, E. R. Sears, Sr., West Coast Branch Sales manager; A. W. Powell, assistant general manager; R. M. Smith, sales representative; K. J. Kelly, sales engineer; and D. H. Steele, general manager.

## At Stevenson, Wash., Susanville, Calif.,
# West Coast growth continues strong

In an area that's growing as quickly as the Far West, telephone operating companies have had to move fast to stay one jump ahead. Two good examples of how this expansion is being provided for are the new XY Dial offices at Stevenson, Wash., and Susanville, Calif.

Stevenson is a 400-line office of the Oregon-Washington Telephone Company, which has headquarters just across the border in Hood River, Ore. The company was founded by the late Wade H. Dean, and his son Earl now serves as president. More than 34,000 subscribers are served from 42 offices.



Busy hands of A. W. Powell pull toothpicks in preparation for cutover.

The town of Stevenson hugs the northern shore of the Columbia River, about 80 miles east of Vancouver. Lumbering is the backbone of the community's economy.

Dick Hood, local manager, presided at open house activities on the day of cutover. Among the four mayors present was Al Henry of White Salmon, Wash., who serves as assistant to the president of Oregon-Washington Tel.

At Susanville, Calif., Citizens Utility Company of California provided upwards of 2400 subscribers with efficient XY Dial service. XY Dial is also serving subscribers from the Chester, Keddie, Elk Grove, and Burney, Calif., offices along with XY Toll Ticketing at the latter two.

Susanville will serve as a toll center and will operate as an all-number calling office, the first in the company's network.

Construction activity in the area has been implemented by a $20 million conservation center, now under way. The community annually attracts large numbers of campers, who visit the popular Lassen National Park recreation area.

D. H. Steele, general manager of Oregon-Washington Tel, and Charles Nutter, local manager, are both enthusiastic about the area's potential.

Dick Hood, left, Stevenson manager, and Earl Dean, president of Oregon-Washington Tel, have met current needs while providing for growth with 400-line XY Dial Office.

## New XY installations approach 500 for year

Independent telephone companies across the nation are continuing the trend toward XY Dial service at a record pace.

The rate at which these conversions are occurring indicates that the total of new XY Dial installations during the year will approach 500.

Below is a partial listing of commercial offices where XY Dial was installed in May and June.

*Alabama*
Atmore
*Alaska*
Homer
Kenai
*Arizona*
Whiteriver
*Arkansas*
Decatur
Paris
*Colorado*
Hartman
Sheridan Lake
Towner
*Illinois*
Leaf River
*Indiana*
Ashley
Clayton
Elnora
Knox
*Iowa*
Bellevue
Fairfield
New Providence
*Kansas*
Alma
Barnard
Bennington
Burlington
Gridley
Home
Riverton
Scammon
Thayer
Vermillion

*Kansas (Cont'd)*
Walton
Wheaton
*Kentucky*
Hyden
*Minnesota*
Blue Earth
Hardwick
Springfield
*Missouri*
Belle
Camden Point
Exeter
Hermann
Missouri City
Norborne
*Nebraska*
Ft. Calhoun
*North Carolina*
Stanleyville
*Pennsylvania*
Beallsville
Fairfield
Harrison City
Three Springs
*South Carolina*
Eutawville
*Washington*
Morton
Stevenson
*West Virginia*
Worthington
*Wisconsin*
Delafield
Dousman
Tomah

**Transmitter**
GEORGE B. FORBES, Editor
J.T. LONG, Associate
XY Trademark registered

GENERAL DYNAMICS | TELECOMMUNICATION
100 Carlson Road, Rochester 3, New York

# Advertisers' Index


AC Spark Plug Division of General Motors Corp.
ADC Products
Acker Co., George M.
Acme Visible Records, Inc.
Airtronics International Corp. 95
Alphaduct Wire & Cable Corp. 19
Altec Lansing Corp. 103
Aluminum Co. of America 64-65
Aluminum Ladder Co. 30
American Steel & Wire Div. of United States Steel 91
American Tel. & Tel. Co.
Anaconda Wire & Cable Corp. 29
Associated Engineers, Inc. 124
Auburn Machine Works, Inc. 118
Automated Gift Plan, Inc. 28
Automatic Electric Co. 32-33, 70-71

Bartlett Mfg. Co.
Benner-Nawman, Inc.
Berry & Co., L. M. 2
Bishop Manufacturing Corp. 15
Bohnsack Equipment Co. 121
Brady & Co., W. H.
Brand-Rex Division of American Enka Corp.
Buckeye Tel. & Supply Co. 115, 122
Budelman Electronics Corp. 8

Cable Spinning Equipment Co. 105
Calculagraph Co.
Chance Co., A. B. 36
Charles Machine Works, Inc.
Chevrolet Division General Motors Corp. 44-45
Chisholm-Moore Div. of Columbus McKinnon Corp.
Collins Radio Co.
Commercial Cord Co., Inc. 21
Communication Equipment & Engineering Co. 24-25
Comptometer Corp. 40
Cook Electric Co.
Copperweld Steel Co. 34-35
Crane, Inc., Carl C. 124

Dahl Co., Inc., George W. 105
Davis Construction Co. 124
Davis Manufacturing, Inc.
Deere & Co. 89
Dial Haven, Inc. 124
Dialight Corp.
Diamond Expansion Bolt Co., Inc.
Dannelley & Sons Co., R. R. 115
Donnelley & Co., R. R. 115
Duriron Co., The 82

Ehinger, C. D.
Electronic Secretary Industries, Inc. 92-93
Essex Inn, The, 80
Exide, Industrial Div. of The Electric Storage Battery Co. 31

Fair Radio Sales
Fairfield Industries, Inc.
Fitchburg Engineering Corp. 75
Floor-Con 117

Gagne Enterprises, Inc. 94
General Cable Corp. 16-17
General Dynamics Telecommunications 76-77, 125-130
General Electric Co.
General Machine Products Co., Inc. 98
General Telephone Directory Co. 134
Gladwin Plastics, Inc. 111
Gould-Batteries, Inc.
Graybar Electric Co. 10-13
Greenlee Tool Co. 116

Hallamore Electronics Co. 120
Hamilton Associates, Allen K. 124
Harris-McBurney Co. 124
Heller-Roberts Mfg. Corp.
Henkels & McCoy, Inc. 124
Hirsch Organization Inc.
Hogg & Davis, Inc.
Holan Corp.
Holtzer-Cabot Tel. Div. National Pneumatic Co., Inc.
Hubbard & Co. 43
Hughey & Phillips, Inc.

ITT Kellogg 26-27
Independent Telephone Corp.
Independent Telephone Repair Co.
Indiana Steel & Wire Co., Inc. 23
International Teletronics, Inc.

Johns-Manville

Kay & Associates, D. J. 122, 124
Kearney Corp.
Keystone Steel & Wire Co., Inc.
Kidder, Peabody & Co., Inc. 80
Kohler Co.
Koiled Kords, Inc.
Koppers Co., Inc. 123

Latham Time Recorder Co. 114
Leich Sales Corp. 38-39, 72-73
Lenkurt Electric Co. 108-109
Lindsay Telephone Supply Co.
Lorain Products Corp. 37
Lynch Communication Systems, Inc.

Mast Directory Co., Laland 123
Mathews Company 123
McCabe-Powers Body Co. 99
McGrath Engineering Co. 124
Monsanto Chemicals Co.
Morrison-Pelsue Co.
Motorola 61
Mutual Liquid Gas Equipment Co. 61

Natco Corp. 117
National Standard Co.
National Telephone Supply Co.
Neuses, Inc., P. K. 124
North American Phillips Co., Inc.
North Electric Co. 86-87
Northeast Electronics Corp.

Page & Hill, Inc. 123
Panhandle Electric Sales, Inc.
Phelps-Dodge Copper Products Corp.
Phillips Chemical Co.
Platt Electronics Corp.
Preformed Line Products Co., Inc.
Puregas Equipment Corp. 119

Radio Corp. of America 133
Railway Communications, Inc. 115
Ramset Fastening System 81
Ramsey Business Equipment, Inc. 124
Raytheon Company 4-5
Reliable Electric Co. 113
Rohn Manufacturing Co. 110
Rolatape, Inc.
Rowco Manufacturing Co.

S & G Manufacturing Corp. 46
Schauer Manufacturing Corp. 106
Seymour Smith & Son, Inc. 104
Sherron Metallic Corp. 7
Sierra Electronics Corp. 41
Side Chart Calculators
Sloan, Cook & Lowe 124
Solitron Devices, Inc. 85
Stampings, Inc.
Steelweld Equipment Co. 94
Stewart Bros. Div. of Instrument Labs
Superior Cable Corp. 102
Suttle Equipment Corp.

TIC of Acton
Telectric Co. 123
Teletype Corp.
Telephone Advertising Institute 96
Telephone Equipment, Inc. 123
Telephone Repair & Supply Co. 123
Telephones, Inc. 98
Telkor, Inc.
Thornhill Publishing Co. 120
Tip Top Tree Trimmers, Inc.
Transandean Associates, Inc.
Truck Equipment Co.
Tudor & Yager, Inc. 124

Ultrasonic Industries, Inc.
United Electric Controls
United States Independent Telephone Association
United States Instrument Corp. 103
United States Steel American Steel & Wire Div. 91
United Utilities, Inc.
Universal Controls Corp.
Utilities Safety Supply Co., Inc.
Utility Tool & Body Co. 124

Vermeer Manufacturing Co.

Warren Mfg. Co., Inc.
Western Electric Co. 100-101
Whitaker Reel Manufacturing Co.
Whitney-Blake Co. 107
Willys Motors
Winders & Geist, Inc. 90
Wyoming Valley Equipment Div.

Zippertubing Co., The 112

# THE BACK OF THE BOOK

By JOHN G. REYNOLDS

## Would Living Today Have Spoiled Abe?

IF ABRAHAM LINCOLN was alive these days, the Rotary Club would provide him with a lot of good books, the Lions Club a reading lamp, while the Kiwanis Club would supply his cabin with a wooden floor.

Abe would have government protection under the minimum wage law and social security.

If the wages he was offered were not satisfactory, he would receive a subsidy for rail splitting, another for raising some crop he was going to raise anyway, and still another subsidy for not raising a crop he had no intention of raising.

The rail splitters union would increase his wages periodically.

Result: He wouldn't be President Lincoln.

## George Dey

IF YOU have been wondering who really killed "George Dey" (See page 64, August 15 issue of *TE&M*). *Pacific Telephone Magazine reports:*

*"Among the letters we have received, most blame the company. Only one pins it on George himself. A paragraph from one letter is fairly illustrative of correspondents' opinions:*

*" 'George Dey was murdered by the stagnant effect produced by enforced conformity; his demise was precipitated by his membership on a team whose foundation is stereotyped with a framework of innocuous anonymity.' "*

What's your opinion? Why not reread the article and let us have your ideas?

## One for the Book

SO FAR, we seem to have made a dismal failure of outselling communism to uncommitted nations. Could this be because we soft-pedal preaching the merits of our own free republic? A Post Office Department ruling as to wording on metered mail envelopes resulted in this editorial in the *Ontario* (Calif.) *Daily Report*:

"We were only joshing . . . when we suggested that it would be forbidden to meter mail with . . . 'I pledge allegiance to the flag of the United States of America and to the republic for which it stands . . .'

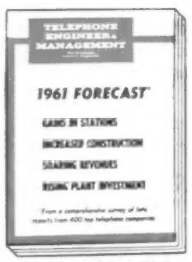
"We were thinking of the trouble a textile mill operator, A. G. Heinsohn, Jr., had when he ordered a meter die containing the subversive slogan, 'Ours is a republic, not a democracy. Let's keep it that way.'

"Pitney-Bowes, the producers of mail metering machines, got themselves in hot water with the Post Office Department for furnishing Mr. Heinsohn with such a die. Mr. Heinsohn could ballyhoo his textiles with metered mail. But he couldn't stir up controversy. The word 'republic' was clearly controversial.

"All this led us to speculate, in a vein we thought frivolous, that the first score of words in the pledge to the flag might also be controversial. They contained that horrid term 'republic.' And so it was with disbelief that a day or two later we read in a weekly journal that another textile mill had been refused a meter die by Pitney-Bowes.

"Spindale Mills in North Carolina had ordered a noncommercial slogan and was turned down. The slogan: 'I pledge allegiance to the flag of the United States and to the republic for which it stands.' "

What's the Post Office scared of??


THE TELEPHONE INDUSTRY MAGAZINE

*Place your ONE-year TE&M order now . . . and enjoy 24 issues of TE&M for less than 17 cents per issue!*

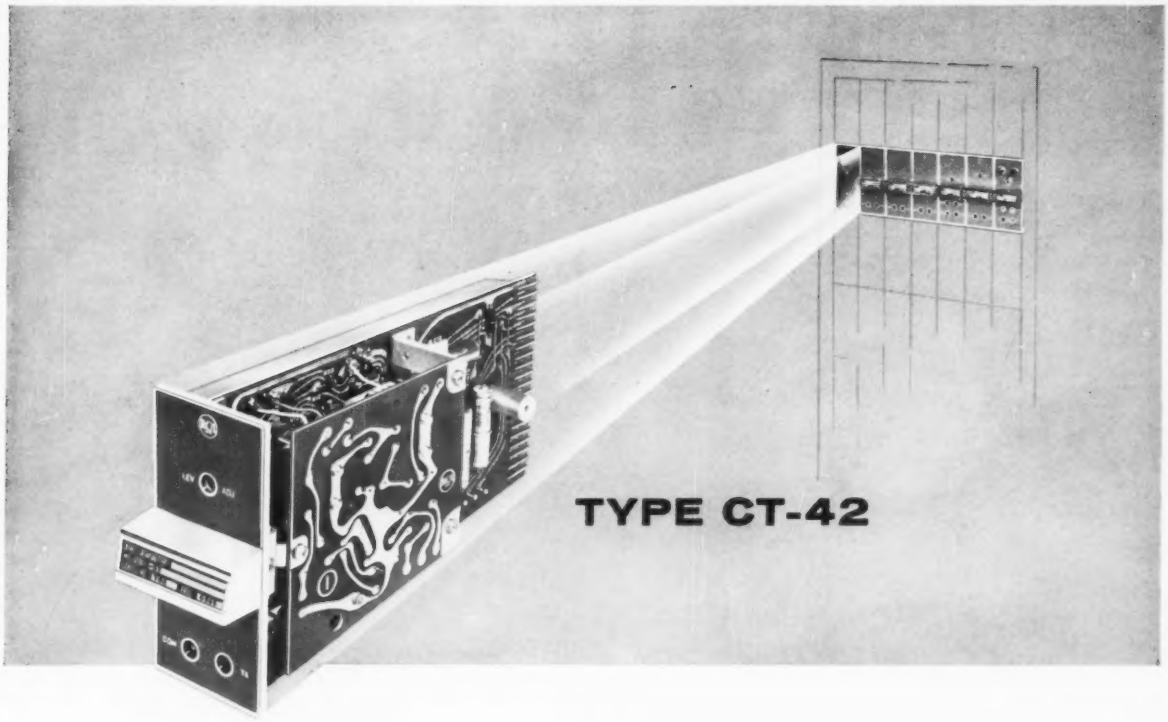
Send to .....
Street .....
City ..... State .....
Title or Type of Work .....
Company Name .....

☐ 3 years ....$8.00 (72 ISSUES)
☐ 2 years ....$6.50 (48 ISSUES)
☐ 1 year ....$4.00 (24 ISSUES)

This subscription is New ☐ Renewal ☐
☐ Remittance Enclosed ☐ Please Bill Me ☐ Bill Firm

Date ..... Signature .....
Mail to TE&M, 7720 Sheridan Rd., Chicago 26, Ill. 10-15-61

# NEW... FROM RCA




## SOLID STATE TONE MULTIPLEX

### FOR WIRELINE, MICROWAVE OR CARRIER

24 channels from 420 to 3180 cps—Spaced every 120 cycles (CCITT Standards)
18 channels from 4300 to 7600 cps—Spaced 170 to 220 cycles

The CT-42 is an all new tone multiplex of high performance designed to operate over a wide environmental range. Ruggedly built, it uses computer grade components for lasting dependability.

Each channel can be frequency-shift or AM keyed for teletype, telemetering, control or data signals. Six transmitters or receivers in any combination may be plugged into a standard shelf which also contains a husky regulated power supply.

Channel units operate from 24 V DC or 117 V AC power supply.

If you are looking for the newest and best in tone multiplex equipment, mail the convenient coupon for complete specifications and prices.

RCA®
The Most Trusted Name in Electronics
RADIO CORPORATION OF AMERICA

**RADIO CORPORATION OF AMERICA**
Microwave Equipment, Dept. AC-430
Building 15-5, Camden 2, N.J.

☐ Please send new catalog sheet and price list on Type CT-42 Tone Equipment.

NAME_____ TITLE_____

COMPANY_____

ADDRESS_____

CITY_____ ZONE_____ STATE_____

Let our "Revenue Men" show you

# THE ADDED BENEFITS OF COMPLETE DIRECTORY SERVICE

Take a man like

**Dick Anstadt...**

Dick is one of our "Revenue Men" in, Spokane, Washington.

He thrives on activity. In high school, Dick was a member of the Spokane All-Star Basketball team and an editor of his school paper. He earned most of his expenses while attending Washington State College – before the war clouds gathered.

Dick joined the U.S. Air Force in 1942 and served as a weather forecaster. After the war, he went to work gaining sales experience in several different fields—building materials, paper products, and clothing.

Dick joined General Telephone Directory Company in 1957 as a sales representative in our Spokane unit. In 1959, he was named Sales Supervisor of the Spokane unit.

Of course, Dick and his wife are well-known in Spokane. He is very active as a member of the Athletic Round Table and Spokane Press Club, and serving the United Crusade and YMCA Building Fund.

Men like Dick Anstadt are an asset to any community—like all "Revenue Men" who work for the General Telephone Directory Company—and you.

From A to Z, we can give you complete, quality directory service—sales, publishing and printing. Wherever you operate, our trained "Revenue Men" are nearby. They're working out of 35 strategic locations coast to coast.

Our "Revenue Men" act as telephone company representatives in their day-to-day contacts with your customers. They're not only salesmen—they are also good-will ambassadors for you, in their dealings with the public.

They're experienced hands at helping Independent Telephone Companies, both large and small. So why not let us build directory revenue and good will for you through our complete service? Write or phone if you'd like to discuss it—without obligation!

## GENERAL TELEPHONE DIRECTORY COMPANY

1800 Oakton Boulevard
Des Plaines, Illinois
VAnderbilt 7-6111

DIVISION OFFICES:
Bloomington, Illinois • Columbia, Mo. • Durham, N.C. • Erie, Pa. Fort Wayne, Ind. • Honolulu, H.I. • Lexington, Ky. • Long Beach, Calif. Madison, Wis. • Manila, P.I. • Muskegon, Mich. • St. Paul, Minn. San Angelo, Tex. • San Francisco, Calif. • Spokane, Wash. St. Petersburg, Fla.